Exhibit C

IN THE UNITED STATES DISTRICT COURT

FOR THE EASTERN DISTRICT OF NEW JERSEY

- - -

IN RE: JOHNSON & JOHNSON TALCUM POWDER PRODUCTS MARKETING, SALES PRACTICES, AND PRODUCTS LIABILITY LITIGATION	:	NO. 16-2738 (FLW) (LHG)
THIS DOCUMENT RELATES TO ALL CASES	:	

- - -

March 27, 2019

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Videotaped deposition of KEVIN HOLCOMB, M.D., taken pursuant to notice, was held at Weil Gotshal & Manges, LLP, 767 Fifth Avenue, New York, New York, beginning at 9:53 a.m., on the above date, before Michelle L. Gray, a Registered Professional Reporter, Certified Shorthand Reporter, Certified Realtime Reporter, and Notary Public.

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None.

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None.

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THE VIDEOGRAPHER: We are now on the record. My name is Henry Marte. I am a videographer with Golkow Litigation Services.

Today's date is March 27, 2019, and the time is 9:53 a.m.

This videotaped deposition is being held at 767 Fifth Avenue, New York, New York in the matter of Talcum Powder Litigation.

The deponent today is Dr. Kevin Holcomb.

All appearances are noted on the stenographic record.

Will the court reporter please administer the oath.

- - -

... KEVIN HOLCOMB, M.D., having been first duly sworn, was examined and testified as follows:

- - -

EXAMINATION

- - -

BY MS. GARBER:

Q. Good morning, Doctor.

A. Good morning.

Q. Would you please state your name for the record?

A. Yes. My name is Kevin Holcomb.

Q. And you're a medical doctor?

A. Yes, I am.

Q. Are you a gynecologic oncologist?

A. I am.

Q. And are you a practicing gynecologic oncologist?

A. I am.

Q. Where do you practice?

A. I practice at Weill Cornell Medical Center.

Q. Thank you. Are you here today as a litigation expert for the defendant, Johnson & Johnson?

A. I am.

Q. And this is not the first time you've testified for the defendant

Johnson & Johnson regarding their talcum powder products and risk of ovarian cancer; is that true?

A. That's true.

Q. You testified in deposition and at trial in the Ingham matter; is that correct?

A. That's correct.

Q. Have you ever testified in deposition or trial in any other talcum powder ovarian cancer cases?

A. No, I haven't.

Q. Doctor, have you been sued in connection with your own medical care and treatment?

A. Yes, I have.

Q. How many times?

A. Probably about three.

Q. Doctor, if you testified in a prior matter that it was four times, does that refresh your recollection?

A. It's possible.

Q. Are all of the matters wherein you were sued as a medical

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defendant resolved in one way or another?
A. I believe there's still one outstanding.
Q. What is the name of that matter?
A. I'm trying to remember the patient's last name. I'm sorry. I don't remember the last name of the patient, sorry.
Q. Where was that case venued?
A. In New York.
Q. And is it accurate, Doctor, that none of those matters concern diagnosis and/or treatment of ovarian cancer?
A. That's true.
Q. Is the nature of the matter that's still open in connection with performance of robotic surgery?
A. Yes.
Q. Thank you. So I don't know the last time that you've been deposed. Has it been since the Ingham matter?
A. That was the last time.

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Q. All right. I'll go through the admonitions that typically accompany the deposition process so we've reviewed the most important ones. Okay?
A. Okay.
Q. All right. You've taken an oath to tell the truth under penalty of perjury. And, Doctor, you understand that that oath carries the same force and effect as if you were testifying in a court of law even though you are in an informal setting of this conference room. Do you understand that?
A. I do.
Q. And you've given depositions so you know that the court reporter is going to be taking down what's said, and we want to avoid talking over one another.
You're doing a good job of waiting for my question. And I'll try to do the same, wait for your answer, so we get a clear record. Okay?
A. Okay.

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Q. If you don't understand one of my questions, I'm bound to be unartful at times, and I don't want you to guess at what you think I'm asking you. Just please ask me to clarify. Because if you don't I'm going to assume that you understood my question. Is that fair?
A. That's fair.
Q. All right. I just want to kind of clear up a few definitions so we're on the same page. Okay?
When I refer to talcum powder products today, will you understand that that includes Johnson & Johnson's Baby Powder and Shower to Shower products?
A. Yes.
Q. And in your report you use the word talc. Is that fair to assume that you are including Johnson & Johnson's Baby Powder and Shower to Shower products?
MS. CURRY: Objection to form.

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THE WITNESS: That's true.
BY MS. GARBER:
Q. What is a carcinogen?
A. A carcinogen is something that causes cancer.
Q. What does it mean to be carcinogenic?
A. To have the ability to cause cancer.
Q. What is a risk factor in the context of ovarian cancer?
MS. CURRY: Objection to form.
THE WITNESS: A risk factor is something that's associated with a higher likelihood of developing a cancer.
BY MS. GARBER:
Q. How do you define higher likelihood?
A. More likely than if you hadn't been exposed.
Q. To a medical degree of certainty?

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MS. CURRY: Objection to form.
THE WITNESS: Typically that is something that I would relate to statistical analysis from studies. So there would be statistical definitions.
BY MS. GARBER:
Q. Rather than a medical degree of certainty, correct?
MS. CURRY: Objection to form.
THE WITNESS: My medical degree of certainty is often based on the statistical results of tests.
BY MS. GARBER:
Q. How do you define a causal factor in the context of ovarian cancer?
A. A causal factor would be something that you know caused the cancer.
Q. How do you know if it caused cancer?

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MS. CURRY: Objection to form.
THE WITNESS: Well, in the context of any individual patient, I can't say what caused their cancer. So I think it's impossible to say on an individual level that you've seen that. Outside of the individual, if you have a substance that can transform cells into a malignant phenotype in a cell culture for example, that would be evidence of a carcinogen.
BY MS. GARBER:
Q. What is your definition of the phrase latency period in the context of ovarian cancer?
MS. CURRY: Objection to form.
THE WITNESS: In the context of ovarian cancer -- well, the latency period in any cancer is the time between the initial

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exposure to a known carcinogen and the development of the cancer that it's associated with, that it causes.
BY MS. GARBER:
Q. You used the phrase "known carcinogen." How do you know if it's a known carcinogen?
A. Well, if it's not a carcinogen, you can't really have a latency period.
Q. In the performance of a study assessing whether or not it's a carcinogen, you can nevertheless still have a latency period for purposes of determining follow-up and things of that nature, correct?
A. No, I don't think --
MS. CURRY: Objection to form.
THE WITNESS: I don't agree with that.
BY MS. GARBER:
Q. You don't?

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A. No.
Q. All right. Do you have an opinion as to the latency period for ovarian cancer?
A. In general, I think to define the latency period, you have to, one, start with a carcinogen, and then have data showing that you have an idea from the time of first exposure to that carcinogen to the development of the disease in question.
So latency periods are going to be specific to whichever carcinogen you're speaking about.
Q. Okay. Fair enough. Is serous ovarian cancer included under the umbrella of epithelial ovarian cancer?
A. It is.
Q. So in other words, serous ovarian cancer is ovarian cancer, right?
A. It's a type of ovarian cancer, yes.
Q. Let's talk about some of your qualifications, okay. Is it

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accurate, Doctor, that you've never conducted research experiments regarding the effects of talcum powder products and its carcinogenicity?
A. That's true.
Q. And in your CV it shows that you've never published regarding talcum powder products and ovarian cancer, right?
A. That's true.
Q. Is it also true that you've never published regarding talcum powder products, asbestos, and ovarian cancer?
A. That's true.
Q. You don't have any publications about asbestos at all, correct?
A. That's true.
Q. And you don't have any publications with regard to talcum powder products at all, correct?
A. That's true.
Q. Have you ever created or written any presentations regarding

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talcum powder products and ovarian cancer?
A. No. I've created materials on ovarian cancer and its risk factors and general educational information for the students -- medical students, residents and fellows. But not particularly with regard to talc.
Q. Did any of -- were those in regard to risk factors and ovarian cancer risk?
A. Yes.
Q. And did any of those materials address the issue of talc one way or another?
A. No.
Q. So let me clarify my question. Is it accurate, Doctor, that in those presentations that you've created with regard to risk factors for ovarian cancer, you've never made an affirmative statement in any of those that talc is not a risk factor; is that true?

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MS. CURRY: Object to the form.
THE WITNESS: I'm a little confused by the question. Because if you are giving a lecture and you're listing what you consider risk factors, anything that's not on that list you are not mentioning as a risk factor, so you're -- you're asking me have I formed a negative?
BY MS. GARBER:
Q. Yeah, well, and I appreciate you asking for clarification, because I don't think my question was a good one, so thank you.
I just want to be sure I understand the -- the nature of your presentation.
In your presentation you've never actually used the word talc in any of your presentations with regard to risk factors and ovarian cancer; is that true?
A. No.

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Q. What percentage of your current patients have been diagnosed with female reproductive cancer including ovarian cancer?
A. I'd say about 70 percent of my patients have malignant.
Q. Can you break that down by way of ovarian cancer?
A. Out of that 70 percent, probably 30 percent are ovarian.
Q. For the 30 or so percent that have not been diagnosed with a malignancy, do you counsel them with regard to risk factors?
MS. CURRY: Objection to form.
MS. GARBER: I wasn't done yet. I'll start again.
BY MS. GARBER:
Q. With regard to the 30 percent of your patients that have not been diagnosed with malignancy, is it your custom and practice to counsel them with regard to risk factors for cancer in

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general?
MS. CURRY: Objection to form.
THE WITNESS: I take a formal history and a complete history, and I will address any issues that I may bring up. But giving a general lecture to each patient on the risk factors for cancers, it would only come up in questions.
BY MS. GARBER:
Q. When you take a history, Doctor, do you ask for a patient's exposure to asbestos?
A. When I'm taking a history I do question patients about their occupations. And that would be the only thing I can think of where an asbestos exposure would likely be revealed.
Q. Do you know how long it takes to conduct an asbestos history?
MS. CURRY: Object to form.
BY MS. GARBER:

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Q. A thorough asbestos history of a patient?
MS. CURRY: Same objection.
THE WITNESS: No, I don't.
BY MS. GARBER:
Q. When you take a history, do you ask patients about their exposure to talcum powder products?
A. No.
Q. Why do you ask them about their occupation and put that in the context of asbestos?
MS. CURRY: Object to the form.
THE WITNESS: That's not why I'm asking them about the occupational history. I was thinking, was there any chance of asbestos exposure coming up in my routine questioning, and I thought that would be the only area that I could think of it coming up.
BY MS. GARBER:
Q. And do you relate that to

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any certain risk of any certain type of cancer?
MS. CURRY: Object to the form.
THE WITNESS: Well, I'm aware that heavy occupational exposure to asbestos has been determined by at least some to be a cause of ovarian cancer. So I guess if -- if it came out through a history that a patient had engaged in any of those type of practices, it would -- it would catch my attention.
BY MS. GARBER:
Q. Thank you.
How many publications do you have to your credit about the causes of ovarian cancer over your career?
A. I don't believe any of my publications are addressing the causes of ovarian cancer.
Q. Women place talcum powder products on their genitals to stay fresh

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and clean, right?
MS. CURRY: Object to the form.
THE WITNESS: I'm not sure why every individual uses talcum powder.
BY MS. GARBER:
Q. Do you understand that women place talcum powder products on their genitals?
A. Yes, I do.
Q. And do you understand that women place talcum powder products on their body?
A. Yes, I do.
Q. And of course, you understand that women in the United States were likely diapered with talcum powder products, correct?
MS. CURRY: Object to the form.
THE WITNESS: I'm not sure of the frequency of using it for diaper.

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BY MS. GARBER:
Q. But you understand that at least some portion of the population in the United States was diapered with talcum powder products, right?
A. I do understand that.
Q. Are you aware of data that indicates that there are women now with ovarian cancer who use talc on their genitals in the 1950s, '60s, and early 1970s?
A. Could you repeat the question.
Q. Sure. Are you aware of data that indicates that there are women now with ovarian cancer who used talc on their genitals in the 1950s, '60s, and early 1970s?
MR. MIZGALA: Object to form.
MS. GARBER: Are we -- sorry. Are we going to have one person objecting for the group? I thought that was CMO 11.

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MS. SHARKO: No that's not the in the CMO. He doesn't represent J&J.
MS. GARBER: I thought I read one objection was for all.
MS. SHARKO: Sometimes we do that.
BY MS. GARBER:
Q. Go ahead, Doctor. I forgot my question. Do you remember it?
A. If you would repeat it, I'd appreciate it.
Q. Sure. Let me see if you answered it. So my question is, are you aware of data that indicates women now with ovarian cancer who used talcum powder products on their genitals in the early 1950s, '60s, and 1970s?
A. I think your question was am I aware of any studies that suggest this. And I'd have to say, I'd have to look through each specific study to see do they mention that in particular.
Q. Sure. That wasn't my

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question. So I'll ask it again.
Doctor, are you aware of data that indicates that there are women now with ovarian cancer who used talc on their genitals in the 1950s, '60s, and '70s, any data?
MR. MIZGALA: Objection.
THE WITNESS: I'm not aware of any specific data, no.
BY MS. GARBER:
Q. Do you agree generally, Doctor, that there are women now in the United States with ovarian cancer who were diapered with Johnson & Johnson Baby Powder in the 1950s, '60s, and early 1970s?
MS. CURRY: Object to the form.
THE WITNESS: I don't have any specific data on people being diapered in the '50s and '60s. So no, I'd have to say no.
BY MS. GARBER:
Q. Okay. Johnson & Johnson

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talcum powder products are cosmetic products, not medications, right?
A. That's true.
Q. There's no medical benefits for women to use defendant's talcum powder products on their genitals, right?
MS. CURRY: Objection to form.
THE WITNESS: No, I would disagree with that.
BY MS. GARBER:
Q. There's medical benefits?
MS. CURRY: Object to the form.
THE WITNESS: I think you're using a term "medical benefit." I'm not sure if you can first clarify what you mean by medical benefit.
BY MS. GARBER:
Q. Sure. You've done a risk/benefit assessment of, say, a drug or a medication, right? You know what that means, don't you?

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A. I do.
Q. All right. And what do you think that means, when I say a risk/benefit in the context of a medication?
A. A risk/benefit would be an analysis of the reason why the person is using the drug versus the risk of using the drug.
Q. Right. And so the benefit is the reason they are using the drug, right?
A. Right.
Q. It has to have some sort of efficacy or benefit, right?
A. Right.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. So my question is now take that to talc and talcum powder products. There's no medical benefit in that context, is there?
MS. CURRY: Object to the

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form.
THE WITNESS: I'm assuming a practice that has endured for this long of time, there must be a perception on the people who are using it that they are benefiting from it in some form or fashion.
BY MS. GARBER:
Q. Sure. My question is a little different.
Is -- is there a medical benefit to using talcum powder products in the same context as, say, a medication, drug, something like that?
MS. CURRY: Object to the form.
THE WITNESS: Yeah, I would say there is.
BY MS. GARBER:
Q. There isn't or --
A. There is, I would say.
Q. There is? So you would tell a patient to use talcum powder products for a medical benefit?

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MS. CURRY: Object to the form.
THE WITNESS: That wasn't -- no, I wouldn't. But I believe your question was, is there a medical benefit. And that's in the eye of the patient who's using it. And I would have to ask her why she's using it.
For example, if someone says I'm diabetic, I get yeast infections when I'm moist, and I find that talcum keeps me dry and I have less yeast infections, I would say that's probably a medical benefit to that individual.
BY MS. GARBER:
Q. But talcum powder products do not fall under the rubric of a medication for purposes of regulatory; isn't that true?
A. That's true. But things that fall under the rubric of medications

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that we prescribe pretty regularly that are just quality of life issues are considered medications. I mean there are medications that prevent hot flashes. I don't believe anybody can point to a specific medical benefit of stopping hot flashes, but there's still medications for that use.
Q. Doctor, you've been designated as an expert by Johnson & Johnson in the talcum powder litigation in the multi-district litigation; is that right?
A. That's true.
Q. And you understand that we're here today to take your deposition to get all your opinions and the bases of those opinions so we can prepare for briefings, hearings, and trial.
Do you understand that?
A. Yes.
Q. When were you first retained in the talcum powder ovarian cancer litigation generally, not in the MDL,

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just in general?
A. The Ingham case was my only other involvement. And I believe that. That interaction began late. Probably November -- let me think. I guess that would be November of 2017 then.
No, I'm sorry, more like January. I think it was more like January of 2018 then.
Q. Were there any documents that would refresh your recollection in that regard?
A. Not that I can think of.
Q. You are not an asbestos expert, are you?
A. No.
Q. Before you were hired by Johnson & Johnson regarding talcum powder products, is it fair to say that your understanding of asbestos was pretty limited?
MS. CURRY: Object to the form.
THE WITNESS: I'm not sure

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what you mean by limited.
BY MS. GARBER:
Q. Did you testify that it was pretty limited in a prior case?
MS. CURRY: Object to the form.
THE WITNESS: When I -- if I had used the term limited, I guess I was referring to its role in gynecologic oncology.
I'm not an expert in asbestos in any way. But I probably have the same amount of knowledge as anyone else.
BY MS. GARBER:
Q. Doctor, let's look at your prior testimony, if we can.
I'm going to mark as Exhibit 1 -- no, I'm not going to mark it for now.
Doctor, let me pass you over --
MS. CURRY: Do you have a copy of the full transcript?

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MS. GARBER: I do.
BY MS. GARBER:
Q. Doctor, if I could call your attention to --
MS. GARBER: You know what, I am going to mark this as Exhibit 1.
Can I have that back, Doctor?
THE WITNESS: Sure.
MS. GARBER: Sorry.
(Document marked for identification as Exhibit Holcomb-1.)
BY MS. GARBER:
Q. I don't mean to throw these at you.
A. I didn't take offense.
Q. I apologize.
So the front page of Exhibit 1 indicates that this is a deposition transcript on May 7th, 2018, in the Ingham case; is that correct?
A. That's correct.

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Q. And on the front page it indicates that you are the deponent, correct?
A. That I am the?
Q. Person who was being deposed.
Does your name --
A. Yes.
Q. Yes, it is.
And then, Doctor, if you turn to Page 56 of the transcript, lines 2 through 8, I will read it.
"Question: In fact, is it fair to say that, B, until you began consulting for Johnson & Johnson, your understanding of the different fibers of asbestos that exist was -- was pretty limited?
And then question: "Is that fair to say?"
And the answer was: "That's fair to say."
So, Doctor, you agree that your understanding of asbestos was pretty

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limited before you were hired by J&J, correct?
MS. CURRY: Object to the form.
THE WITNESS: Your prior question just asked me about my understanding of -- of asbestos and was proceeded by my admitting that I'm not an asbestos specialist.
This testimony has to do with my understanding of the different fiber types of asbestos. So I think there's a little bit of a difference in what I was testifying about here and your question. But I don't see the inconsistency.
BY MS. GARBER:
Q. Okay. Fair enough.
As to the fibers, before you were hired by J&J and consulting for them, you weren't even aware what an amphibole was, right?

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A. No.
Q. All right. When were you first retained in the MDL talc litigation?
A. That, I believe, was around November of 2018.
Q. And what was your understanding of your assignment when you were hired in the MDL?
A. My understanding with that, was that I was -- I was being asked for my opinion based on my assessment of the existing body of literature in the area of whether talc causes ovarian cancers.
Q. We're going to get to the body of literature in a moment. But were you asked to do anything else? Or what -- strike that.
What was your understanding of your assignment? Did it -- did it entail anything else?
MS. CURRY: Object to the form.
THE WITNESS: I believe it

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entailed what I thought was necessary to offer an opinion on the question of whether talc use causes ovarian cancer.
BY MS. GARBER:
Q. At the time that you were hired by Johnson & Johnson to do work in the MDL, you already harbored -- harbored causation opinions based on the work that you did attendant to the Ingham cases, correct?
A. That's correct.
Q. Isn't it true that in the Ingham case you formed your opinion that talcum powder products do not cause ovarian cancer based on review of 61 published studies provided to you by counsel for Johnson & Johnson?
MS. CURRY: Object to the form.
THE WITNESS: That's -- that's not true. My opinion that talc did not cause ovarian cancer preceded my involvement with

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Ingham.
But, yes, that reliance list helped further confirm that feeling.
(Document marked for identification as Exhibit Holcomb-2.)
BY MS. GARBER:
Q. Doctor, I'm going to mark as Exhibit 2 another deposition transcript.
Doctor, this is -- Exhibit 2 is the same front transcript, the Ingham matter, and on your deposition taken on May 7, 2018, right?
A. Yes.
Q. And at Page 57, Lines 10 through 14, question reads:
"Are the 61 reliance materials cited in Exhibit 4 the complete universe of the materials that you relied upon in order to form your opinions in that case?
"Answer: Yes."
Is your testimony different

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today, Doctor?
MS. CURRY: Object to the form.
THE WITNESS: No, it's not any different. The -- I can't think of anything that was outside of this data that I reviewed for this case that I had not seen prior.
My testimony today is that my opinion about the causal relationship of talc and ovarian cancer preceded my involvement in Ingham. And your question asked me, or you stated in your question that my opinion was developed during Ingham, or that was my understanding of your question. And that's all I was trying to clarify.
BY MS. GARBER:
Q. Your universe of the data that you relied on in the Ingham matter consisted of 61 published studies

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provided to you by counsel for J&J.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Right?
A. To be honest, some of the materials I found on my own. Some of it was provided by J&J.
And again, I -- I don't know if you mean to be doing this, but I just want to clarify. If I read some of this material years ago and had come to an independent opinion about this, and then I read it again, I don't -- I just want to clarify, that my opinion is not being made during that case.
Q. The 61 studies that were reflected on a reference list were the universe of studies that formed your opinion in the Ingham case, correct?
A. Yes.
Q. Thank you.
You testified that the key literature that formed the basis of your

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opinion in the Ingham case were the cohort studies which included gate -- Gertig, Gates 2010, Houghton, and Gonzalez, Heller 1996, and IARC 2010 and IARC 2012.
Is that correct?
MS. CURRY: Object to form.
THE WITNESS: No. You're -- you're piquing my memory of this -- of this -- because I realize I only have two pages of it.
But repeatedly the counsel who was taking my deposition attempted to limit, as you are defining them, as key pieces of information. My -- my opinion was based on the totality of all the data.
That -- that answer just did not seem acceptable at the time, and there was this attempt to constantly drill down to me identifying a few studies that I

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could say were important, but I repeatedly said then and I imagine I'll maybe have to do that again today, that it is the totality of the data that led me to my opinion.
The universe, I believe, as you like to call it.
BY MS. GARBER:
Q. The totality of the evidence that formulated the opinions in this matter are listed in the reference list of -- lists of your expert report, which is dated February 25, 2019, and the supplemental reference list.
Is that a true statement?
MS. CURRY: Object to the form.
THE WITNESS: That's a true statement, but there -- I -- I did also read the expert reports of others involved in the case. And they referenced other papers that are not in my reference list.

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So I -- I'd have to say I came across more than -- than just what was in my reference list in my preparation.
BY MS. GARBER:
Q. And in regard to what you just said, reading other experts' reports that were involved in the case, is it true that you read the experts' report, but did not read the underlying studies that were referenced in that given expert report?
A. No.
MS. CURRY: Object to the form.
THE WITNESS: That's exactly the opposite of what I'm saying. I'm saying at times I would read something in an expert report that piqued my interest, and I would go back and pull that paper and read the paper.
BY MS. GARBER:
Q. And then you didn't list it

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on your reference list?
MS. CURRY: Object to the form.
THE WITNESS: It was not part of my expert report. My expert report had already been completed.
BY MS. GARBER:
Q. Did you know that a supplemental reference list was just produced in this matter?
A. Yes.
Q. Are you telling me that you have reviewed other materials that do not appear on any of the reference lists that are attached to your expert report or the supplemental materials that were just produced on the 25th?
MS. CURRY: Object to the form.
THE WITNESS: I believe that it -- I don't know exactly the list that you have of everything I reviewed. But if it's not clear

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that I reviewed the other experts' reports and the literature that they were basing their opinions on, I did in some cases.
BY MS. GARBER:
Q. Doctor, you understand that I am entitled to know the materials that you read, reviewed and relied upon in formulating your opinions. You understand that, right?
A. Yes.
MS. CURRY: I can possibly clarify --
MS. GARBER: I don't --
MS. CURRY: -- the issue if it's helpful.
MS. GARBER: Let me -- let me just finish this line of questioning, Ms. Curry. Thank you very much.
BY MS. GARBER:
Q. And, Doctor, is it your testimony that aside from the reference lists that are attached to your expert

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report and the supplemental materials, that there are papers that you have reviewed that are not listed there?
MS. CURRY: Object to the form.
THE WITNESS: I would have to review my reference list and see what's on there. Or all the information that was handed over to you as far as what I reviewed.
But, again, I did look through other experts' reports. If they referenced a study, in most cases, I did not go back and review the study. I just read what they were saying.
BY MS. GARBER:
Q. Can you think of a given study that you were reading an expert report and it piqued your interest, to use your words, and you went and pulled it and read it?
A. No, I can't think of any specific papers.

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MS. GARBER: Go ahead, Ms. Curry. Maybe you can clarify.
MS. CURRY: Just to clarify, we have on the supplemental list, in addition to the expert reports, the deposition transcripts and exhibits to the depositions, and so I believe that the additional articles that would have been reviewed by Dr. Holcomb are included in those exhibits.
MS. GARBER: I see. So what I'm supposed to do is I'm supposed to go pull the deposition, and pull the exhibits and then move those forward to the reference list to understand his library?
MS. CURRY: It's the deposition that you actually took of Dr. Saenz, the exhibits that you presented to her in its totality were provided to Dr. Holcomb after that deposition.

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BY MS. GARBER:
Q. And which of those papers, after reading Dr. Saenz's deposition, which of those -- strike that.
Which of those exhibits after reading Dr. Saenz's deposition did you pull and read, if any?
A. I didn't have to pull any of them of them. The paper was in the -- in the exhibit. And I don't remember which one. I believe there were about 30 exhibits. So if you show me the list I can show you which ones I read.
Q. Did you read every single one of them?
A. No.
Q. Do any come to mind?
A. I just said no.
Q. Are some of them included in the supplemental reference list that was just produced a couple days ago?
MS. CURRY: Object to the form.
THE WITNESS: I don't know.

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BY MS. GARBER:
Q. Did you prepare the supplemental reference list?
A. Yes. I don't remember if there's any overlap I'm saying.
Q. Did you type it up yourself?
A. No.
Q. How was it that that was prepared?
A. How was what?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. The supplemental reference list.
A. The lawyers asked me, was there anything else that I had reviewed, and I just gave them a list of which papers I had reviewed.
Q. Thank you. What did you do to prepare for today's deposition?
A. I reviewed the epidemiologic papers on talc, and in some cases just powder use and ovarian cancer.

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I looked at the basic science papers, some that addressed mechanistic questions.
I looked at some of the basic science papers on theories of carcinogenesis.
I reviewed -- that's pretty much it. I pretty much went through that body of literature, so...
Q. The epidemiological literature that you looked at appear on the reference lists that are attached to your expert report and the supplemental reference list that was just produced?
A. Yes.
Q. And when you say the basic science on mechanism of carcinogenicity, what data are those?
MS. CURRY: Object to the form.
MS. SHARKO: Can you keep your voice a little louder, please?
MS. GARBER: Sure.

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MS. SHARKO: Thank you.
THE WITNESS: Could you repeat the question as well.
BY MS. GARBER:
Q. The basic science with regard to mechanism of carcinogenicity, what specific studies are those?
MS. CURRY: Object to the form.
THE WITNESS: I don't remember the specific studies because most of that came from reviewing other experts' expert reports.
BY MS. GARBER:
Q. Do those studies that you reviewed in connection with preparation for your deposition appear on the reference lists that you have produced?
A. Again, in those cases I wasn't pulling the whole paper. I was just reading expert reports. So no, it's not.
Q. When you say science with

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regard to basic science with regard to carcinogens, the theories of carcinogens, that would be your same answer as the prior one; it was in the context of reading expert reports?
A. That's true.
Q. How many hours did you prepare for today's deposition?
A. Do you mean from the beginning of my engagement in the MDL or?
Q. Specifically in connection with just getting ready for today. I'm going to get to that, Doctor. And thanks for the clarification.
But just with regard to preparing for today's deposition.
A. I'm not sure -- I asked you if there was a difference. But I guess in essence there really isn't. I've been preparing for this deposition from the beginning of my engagement.
So I would say probably about 90 hours.
Q. So is it your testimony that

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from the time that you were retained by Johnson & Johnson in the MDL through today's deposition, you prepared about 90 hours?
MS. CURRY: Object to the form.
THE WITNESS: That's true.
BY MS. GARBER:
Q. And your pay rate is $850 an hour?
A. That's true.
Q. Doctor, in the Ingham case, it was your opinion that occupational exposure to asbestos couldn't cause ovarian cancer; is that correct?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. And is that still your opinion today?
A. As with my deposition at the time of Ingham, I was quoting IARC's monograph on the topic. And also offered

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some critiques of that finding, which included concerns about misclassification, concerns about whether environmental exposures really supported the findings or not. And so, you know, I spent quite a bit of time in the Ingham deposition going through this. But I accepted IARC's findings.
Q. So my question is a little narrower.
A. Mm-hmm.
Q. Is it your opinion today that occupational exposure to asbestos can cause ovarian cancer?
A. In my -- it's my opinion that based on the five heavy occupational exposure papers cited in that IARC monograph, that in those specific situations, yes, those exposures did contribute to ovarian cancer.
Q. Doctor, did you testify in Ingham that occupational exposure to asbestos can cause ovarian cancer?
MS. CURRY: Object to the

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form.
THE WITNESS: Again, if I did, it's to the degree of -- I -- I don't have any opinion outside of the literature that I read on the topic. And the only literature I've read on the topic are those five papers cited in the monograph. So if I said it during Ingham, it's based on the same data that I'd be saying it based on today.
BY MS. GARBER:
Q. Was it your testimony that occupational exposure to asbestos can cause ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: I believe so.
BY MS. GARBER:
Q. And is it your opinion today that occupational exposure to asbestos can cause ovarian cancer?
MS. CURRY: Object to the

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form.
THE WITNESS: Once again, it's my opinion that occupational exposure in those settings as described in the IARC monograph, which would be, you know, the -- the women who participated in gas mask productions, or cement factories in pre-World War II Italy, and in those specific situations, yes, I think that there's enough evidence to deduce that -- that exposure increased the risk of ovarian cancer.
BY MS. GARBER:
Q. So if I asked you in any hearing, Doctor, can occupational exposure to asbestos cause ovarian cancer, and I asked you for a yes or no question, would the answer be yes?
MS. CURRY: Object to the form.
THE WITNESS: I don't think you can ask a yes or no question

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in that situation, because the question is so broad to say in an occupational setting. And I only have data on a few different settings where it was shown. And so I'm going to restrict my opinion to the data I've read, and the data I've read on those specific occupational settings.
BY MS. GARBER:
Q. So, Doctor, I'm going to mark as Exhibit 3 --
(Document marked for identification as Exhibit Holcomb-3.)
BY MS. GARBER:
Q. -- prior deposition testimony in the Ingham matter.
Doctor, this was deposition testimony from May 7, 2018, right?
A. Yes.
Q. And if you turn to Page 103, Lines 7 through 19, it reads:
"Question: Do you believe

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that asbestos exposure can cause ovarian cancer?"
And your answer is: "Yes. We did go over this before and I do believe that occupational exposure to asbestos can cause ovarian cancer."
And it goes on to say: "Is that because you believe that asbestos fibers in the ovaries increases the risk of developing ovarian cancer?"
And your answer was: "I have no idea of the mechanism by which it could occur."
Is that still your testimony today?
MS. CURRY: Object to the form. And to showing one page of the deposition transcript.
MS. GARBER: I don't think we're going to have any speaking objections here today, Ms. Curry. I --
MS. CURRY: It's just -- you're -- he's referring back to

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testimony and you're not showing him the prior testimony.
MS. GARBER: As you well know, Ms. Curry, the proper objection is, "Objection to form."
MS. SHARKO: I think she's doing fine.
MS. GARBER: I'm sure you do.
BY MS. GARBER:
Q. Go ahead, Doctor.
A. So, in my answer I said yes, we did go over this before, which sort of supports the conversation I was saying without all the things I said before, you don't know how to interpret that.
But I know what -- how to interpret that. It's what I'm just saying, we had gone over this multiple times being asked the same question, similar to what's happening now. And I kept restricting it to not stepping outside of -- and -- and this is a common theme that I think we're going to revisit

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over and over today.
This idea of making comments and conclusions that go outside of the specific findings of your studies, and purists and careful clinicians and scientists don't do that. And so if you ask me does any occupational exposure increase your risk of asbestos, how would I know? I only have a body of literature that looks at specific situations. And that's the only situation that I'm going to speak to -- speak about.
So when I said yes, we did go over this before, that's because this was about who knows how many times I had been asked the same question with the same answer.
MS. GARBER: Objection. Motion to strike as nonresponsive.
BY MS. GARBER:
Q. Doctor, you answered to the question, do you believe that asbestos exposure can cause ovarian cancer, yes. We did go over this. And I do believe

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that occupational exposure to asbestos can cause cancer.
A. Are you --
Q. That's your --
MS. CURRY: Same objections.
BY MS. GARBER:
Q. That's your answer, right?
A. My answer has a piece of it that you can't, or don't, or you're not interested in. And I think it's just as important as the part that you're focusing on that says yes, we did go over this before.
I'd be happy to go through the entire transcript of this area. I think you'll find what I'm referring to as being consistent, that I was trying to say that my opinions about exposure in the occupational setting was restricted to the few occupational settings that were defined in the IARC monograph. And that is what I'm trying to tell you now.
Because I said we've gone through this before, I'm referring to

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those qualifications.
Q. I'm just trying to get your opinions here today. You understand that, right?
A. I don't. I don't. I don't think so. Because my opinion on this is so clear that I believe that if you're making gas masks in a World War II, or pre-World War II or during World War II factory, or if you're mixing cement in Italy around the same time, that I'd be concerned about your risk of ovarian cancer.
Outside of those specific situations, I don't have an opinion.
Q. You've read the IARC monograph from 2012 with regard to asbestos, right?
A. Yes.
Q. And, in fact, it's on your reference list in this matter?
A. Yes.
Q. And, Doctor, do you think that the IARC 2002 monograph limits risk

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of ovarian cancer to occupational exposure?
MS. CURRY: I believe you mean IARC 2012. And objection to form.
MS. GARBER: Thank you.
BY MS. GARBER:
Q. So I'll redo that question.
Doctor, do you think the IARC monograph of 2012 limits risk of ovarian cancer to occupational exposure?
MS. CURRY: Object to the form.
THE WITNESS: I'm telling you my -- my opinion, which is what I think you're trying to get at, is that the only data on occupational exposure that showed an increased risk of ovarian cancer were those same specific settings that I am mentioning to you. And so my personal opinion is that I can only speak towards the relationship of asbestos

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exposure in an occupational setting and ovarian cancer with regard to those specific settings.
(Document marked for identification as Exhibit Holcomb-4.)
BY MS. GARBER:
Q. I'm going to mark as Exhibit 4 the IARC monograph of 2012 Volume 100-C, titled "Arsenic, Metals, Fibres, and Dust: A Review of Human Carcinogens."
And I apologize. I don't have a full copy of this with me.
A. Sure. Thank you.
MS. SHARKO: Do you have a copy for us?
MS. GARBER: That's what I just said, Ms. Sharko. I apologize. I don't have a full copy. I have a page that I'm going to question him from, but not all the pages.
It's based on testimony that

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I just got. So I apologize.
BY MS. GARBER:
Q. Doctor, if you could turn to Page 219 of the monograph. And, Doctor, you can look up here. It will go quicker this way if you just --
A. I'd rather look at it, if that's okay.
You said 219. Oh.
Q. Yeah. Why don't you just look up here. I'm just going to read something.
219, it says, exposure data, identification of the agent.
A. 219 -- but what I saw at the back.
Q. Doctor, if you can just look up here.
MS. CURRY: I'm sorry. The exhibit that you just handed him does not have a Page 219, is the problem.
THE WITNESS: So I just -- I just want to make sure that what

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you've given me is what you're reading.
MS. GARBER: Yeah, that's fine.
BY MS. GARBER:
Q. Why don't you just look up here at the Elmo.
A. Are we looking at the same thing?
Q. Yes. Yes. I will cure it on the break.
MS. SHARKO: If the doctor wants a paper copy, number one he's allowed to have it, and number two --
MS. GARBER: Well, you -- you have one.
MS. SHARKO: -- I'm three seats closer to the screen, and I can't even read that.
MS. GARBER: You have one, right?
MS. SHARKO: So I don't know how he can.

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MS. CURRY: This is the one page. I have the full.
THE WITNESS: Okay. So --
BY MS. GARBER:
Q. So at Page 219, Doctor, do you see that it says asbestos, and then it lists the different fibers, correct? The different types of asbestos?
A. I don't know -- can you please --
Q. The title. The title.
A. Yes.
Q. The top.
A. The -- correct.
Q. All right. And then under exposure data, Number 1, it says, "Identification of the agent."
Do you see that?
A. Yes.
Q. And then about halfway through the paragraph, it says, "The conclusions reached in this monograph about asbestos and its carcinogenic risk" --

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A. I'm sorry. I'm still just getting up to where you are.
Q. Just look -- just look up at here, Doctor.
A. Ma'am, if it's okay with you, we went through the trouble to get this because it's easier for me to see. I'm going to use this if you just bear with me.
Q. Okay. Well, then you can look up here to see where I'm reading.
A. I've got you.
Q. Okay. "The conclusions reached in this monograph about asbestos and its carcinogenic risks apply to these six types of fibers wherever they are found, and that includes talc containing asbestiform fibers."
Correct? Is that what it says?
A. That's what it says.
Q. Doctor, that's my only question. Is that what it says?
A. "The conclusions reached in this monograph about asbestos and its carcinogenic risks apply to these six types of fibers wherever they are found." And I'm going to assume that the conclusions are going to be based on the studies that they cite.
Q. Doctor, we don't want to make conclusions. My question is, does that what the monograph say?
A. That's what the monograph --
Q. Did I read that correctly?
A. You read the monograph correctly.
Q. And I have no further question for you.
MS. GARBER: Motion to strike everything besides saying yes, that's what it says.
MS. SHARKO: Does that mean that we're done for today?
BY MS. GARBER:
Q. Doctor, is that what the monograph says on Page 219?
A. That's what the monograph says. I disagree with that. Yes.
Q. Okay. What part do you disagree with?
MS. CURRY: Object to the form.
THE WITNESS: I think -- I was getting at this before, and I think that a lot of what we're going to get into today makes that same mistake. You can't make conclusions about things that you haven't studied. And if you only study a certain setting, and you're able to show that in this setting it causes ovarian cancer, how can you reliably expand that finding to situations that you've never even looked at?
And I don't care if IARC puts it in writing and says they are going to do that. The question is, do I accept that? Do I accept that if you show me that it causes cancer if you're making

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gas masks, that means it causes cancer in any other situation.
I think that's -- clearly is what IARC said they did. I think that's a problem. And I already explained to you some of the other issues that I have with IARC. I mean, we all can make mistakes. There's other issues with IARC. I mean, the studies, even in the ones that I accept, there's misclassification issues.
In fact, if you look at the studies where they do pathologic confirmation, the increased risk is attenuated to the baseline.
And so, you know, part of my being able to give my opinion here is my years of practice. And I've had the experience of debulking somebody who I thought had ovarian cancer who ended up having mesothelioma.
So I know the difficulties

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in being able to tell the difference between the two.
BY MS. GARBER:
Q. Doctor, I'm going to get to your report.
MS. CURRY: Were you finished with your response?
THE WITNESS: No.
And I'm also aware that, you know, there was not even a diagnosis code for malignant mesothelioma at a time that -- an international diagnosis code, an ICD-9 code for mesothelioma during this time.
And I'm sure that the immunohistochemical test that helped to distinguish between ovarian cancer and primary peritoneal cancer and malignant mesothelioma were not developed at that time.
So, yes, I take IARC at what they're saying. But even in the

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settings where they found that it's associated with, there are weaknesses in their findings. To extend that definition outside to any occupational exposure that they haven't examined, I think is problematic.
BY MS. GARBER:
Q. Doctor, what was my question?
A. Did IARC make that statement, and I said yes.
Q. Thank you.
MS. GARBER: Motion to strike everything besides that.
MS. SHARKO: Well, that wasn't the question you asked.
BY MS. GARBER:
Q. Doctor, you disagree --
MS. CURRY: He answered your question.
MS. O'DELL: All right, Susan. We went over this earlier -- I think -- not earlier

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this week, last week. I think Dawn is doing the objections. There's no need for you to add the commentary.
MS. SHARKO: Well, why -- why are you talking if it's one lawyer per side? You should have been there yesterday when you had three people on your side talking at us.
MS. O'DELL: Well, I can't -- can't speak to yesterday. But we've had this discussion, you and I, and --
MS. CURRY: As the person making objections, I do want to put on the record that the question that was asked was what part of -- of IARC do you disagree with, and so Dr. Holcomb's response was directly responsive to that question.
Thank you.

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BY MS. GARBER:
Q. Doctor, we will get to your report and what you say about asbestos.
My question was simply, Number 1, at Page 219 where I read: "Is that what the monograph says?"
And I think your testimony was, yes, that's what the monograph says, correct?
A. That's what the monograph says.
Q. All right. And then I wanted to show you next at Page 232 with regard to your testimony about the populations?
A. I'm sorry.
Q. 232 --
A. 232, right.
Q. -- under human exposure.
A. This is the --
Q. Are you there?
A. I'm just a little confused, because this is talking about talc. And we were talking about asbestos.

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Are we in the same --
Q. Are you --
A. I think I'm in a different --
Q. -- are you on Page 232?
A. Yes, but I don't know if I'm reading the same thing you are. You are talking about the monograph on --
Q. On asbestos.
A. Right. I think I'm in the wrong --
Q. No, that is -- that is --
A. This is the right one? Oh, 2012. So this is the one.
Q. Okay. Doctor, under 1.6.5, it says, "Human Exposure"?
A. Yeah.
Q. And then it indicates "Exposure of the General Population."
Is that the heading?
A. Exposure of the general population. And it's -- yeah, exposure to talc for the general population.
Q. Okay. Well, let's read what

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it says.
It says, "Consumer products, e.g., cosmetic, pharmaceuticals, are the primary sources of exposure to talc for the general population. Inhalation and dermal contact through" -- "i.e., through perineal application of talcum powders, are the primary routes of exposure."
Did I read that correctly?
A. Yes.
Q. So that is indicating that talcum powder products and exposure in the general population, correct?
MS. CURRY: Object to form.
BY MS. GARBER:
Q. That's on Page 232?
A. I -- I just want to -- I know we're only picking out this one page to read, but it's a little confusing to me since we had started reading a monograph on asbestos and this seems to be dealing with talc.
So I turn one page back. This is a section on talc containing

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asbestiform fibers.
So this area that we are talking about -- I -- I don't know if they are talking about -- what -- I'm a little unclear of what they are talking about here, with the general -- are they talking about asbestiform fibers? Are they talking about -- I'm not sure.
Q. Let me see if I can help you.
A. Thank you.
Q. So turning back to 219.
A. Yes.
Q. Where the monograph says, "The conclusions reached by the monograph about asbestos and its carcinogenic risks apply to these six types of fibers wherever they are found -- thereby meaning asbestos -- and that includes talc containing asbestiform fibers."
So this monograph applies to both talc containing asbestiform fibers, and asbestos.
You understand that,

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correct?
A. This goes to the question of what I disagree with, because what you're saying is that if they study asbestos in these heavy occupational exposures, that means you should then extend these findings to other clinical settings outside of that. And -- so yes, I get what you're saying and that's exactly what I was saying I disagreed with.
Q. Do you -- I guess I don't know what your -- what your opinion is, so I'll ask it.
You understand that this monograph from 2012 applies to asbestos and asbestiform talc, you understand that, right?
A. Yes.
Q. Thank you.
Doctor, in your expert report and just a minute ago, you were talking about the misdiagnosis of ovarian cancer and peritoneal mesothelioma. Do you recall that?

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A. I said misclassification.
Q. Okay. And, we'll turn to that part of your expert report in a bit. But since you brought it up, if you could turn to Page 356 of the monograph.
A. Sand and gravel?
Q. It's -- did I say three?
A. You said 356, sand and gravel.
Q. 256. I apologize.
A. Okay.
Q. Okay. If you look at the right-hand column. We'll -- we'll start with the first full paragraph which reads the working group -- are we together?
A. Yes.
Q. Okay. "The working group noted that a causal association between exposure to asbestos and cancer of the ovary was clearly established based on five strongly positive cohort mortality studies of women with heavy occupational exposure."
That's what you were

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testifying a bit ago, right?
A. That's true.
Q. All right. But it goes on, doesn't it, Doctor? It says, "The conclusion received" -- "the conclusion received additional support from studies showing that women and girls with environmental, but not occupational exposure to asbestos," right?
A. This is what I was -- maybe -- maybe it wasn't clear what I was referring to when you asked me earlier what I disagreed with.
And I talked about the limitations of the IARC monograph. I mentioned this issue, that they'll make these statements and then they give you a couple of papers to go look at; Ferante, et al., and Reid, et al.
When you go back and you look at those studies, they actually come to the exact opposite conclusion, that women in those settings did not have an increased risk of ovarian cancer. And

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yet the IARC authors say that their findings were supported. So they have five strong studies showing an increased risk of ovarian cancer. Two studies in -- in environmental settings that show no increases of ovarian cancer come to the conclusion that that is not a discrepancy, it's actually in support of.
And I am supposed to read this and agree with that.
Q. You disagree with IARC and their findings with regard --
A. No, and if they regard --
Q. Hold on, Doctor.
A. Yes. Okay.
Q. You disagree with IARC and their findings with regard to asbestos and asbestiform talc and its carcinogenicity as it relates to the ovary, correct?
MS. CURRY: Object to the form.
THE WITNESS: My opinion about this is that I restrict my

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opinions about the carcinogenicity of asbestos with ovarian cancer to the settings where it was shown to increase ovarian cancer.

If you ask me about settings where the studies explicitly show it did not increase ovarian cancer, I don't accept that it increases ovarian cancer in those situations.

I don't understand how a reasonable person could. If you read a study that says it did not increase risk of ovarian cancer in a situation, why would you then conclude that it does?

BY MS. GARBER:

Q. Have you done a thorough and comprehensive assessment of the literature as it pertains to asbestos and ovarian cancer?

MS. CURRY: Object to the form.

THE WITNESS: To be honest,

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I'm hoping that IARC would have done an extensive study of the literature. So my only -- as I've already admitted, I'm not an asbestos specialist, so my understanding of asbestos and ovarian cancer is limited to IARC.

And if they've done an extensive review to reach their conclusions, then I would have to say that I have as well, because I reviewed the papers they've reviewed. And I've already repeatedly told you the problems that I have with saying you're supported by studies that find the exact opposite findings of the studies that hold your original opinion.

BY MS. GARBER:

Q. Is the answer to my question no, I have not conducted a full comprehensive review of the literature?

MS. CURRY: Object to the

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form.

THE WITNESS: I believe I have. I'm disagreeing with you.

BY MS. GARBER:

Q. Because --

A. I'm saying --

Q. Because you --

A. -- because I reviewed IARC --

MS. CURRY: Sorry. You can't talk over one another.

Do you want to finish your response?

THE WITNESS: My understanding is that IARC, because so many other groups rely on their findings to inform their opinions, that they are tasked with doing a comprehensive review of the literature on the topic. And so yes, I feel like if I reviewed what they reviewed, I've done a comprehensive review as well.

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BY MS. GARBER:

Q. With regard to the misclassification issue that you testified about, Doctor, if you could look back at Page 256.

A. Yes.

Q. It indicates, "The working group carefully considered the possibility that cases of peritoneal mesothelioma may have been misdiagnosed as ovarian cancer and that these contributed to the observed excesses. Contravening that possibility is the finding that three of the studies cited here specifically examined the possibility, and there were misdiagnosed cases of peritoneal mesothelioma, and all failed to find sufficient numbers of misclassified cases."

Doctor, do you agree with that statement?

A. I agree with the statement that they did not find what they considered enough cases of misclassified

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cases. But I'm aware that they actually did not go back and do a histologic evaluation of every case.

What I'm also aware of is that specific cases that do systematically go back and have pathologic confirmation somehow come to a different conclusion than the studies that don't do that. And so I'm still left wondering, if you do a systematic pathology review and classify them, you don't find an increased risk. If you don't do a systematic pathology confirmation, you find an increased risk.

I'm like IARC, I'm not convinced that misclassification has been totally ruled out because I can't understand why these two different types of studies are coming -- you see, you're losing consistency then.

Q. IARC found otherwise.

A. I just admitted that I have a different opinion.

Q. So your review as to the

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issue of asbestos and asbestiform talc and carcinogenicity is limited to IARC 2012, correct?

MS. CURRY: Object to the form.

THE WITNESS: Again, I'm trying to -- trying to state this as clearly as possible so we can move on.

My opinion of asbestos and its ability to cause cancer of the ovary are restricted to the studies of heavy occupational exposure in which they actually found an increased risk of ovarian cancer.

BY MS. GARBER:

Q. And your review to come to your opinions is limited to IARC 2012?

MS. CURRY: Object to form.

THE WITNESS: As far as asbestos?

BY MS. GARBER:

Q. Yes.

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A. Yes.

Q. And asbestiform talc?

A. Yes.

Q. Thank you.

Do you agree, Doctor, that asbestos and asbestiform talc are Group 1 carcinogens under IARC 2012?

A. I agree.

Q. Doctor, if talcum powder products contain asbestos, talcum powder products contain a Group 1 carcinogen?

MS. CURRY: Object to the form.

THE WITNESS: Excuse me?

BY MS. GARBER:

Q. You just testified that asbestos is a Group 1 carcinogen, right?

A. Yes.

Q. And --

A. According to IARC, yes.

Q. Okay. And if, it's a hypothetical, talcum powder products contain asbestos, then those talcum powder products contain a Group 1

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carcinogen, right?

A. That would be IARC's opinion, yes.

Q. Is it your opinion? It's a Group 1 carcinogen.

A. You asked, you asked what -- in the beginning whether -- what's my definition of a carcinogen. And I said it's a substance that can cause cancer.

So on one hand you're asking if it contains this substance that IARC has deemed a Level 1 carcinogen, would it contain that carcinogen? By definition, yes. You said if I take that supposition.

I would just say I'm looking at, and I was asked to review the literature on talc. And you asked me what do I consider talc, and I said Johnson & Johnson and Shower to Shower. Is that a carcinogen?

And now that goes back to my definition of carcinogen. Can that powder cause cancer? And my review, as

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you know you've already asked, would be no.
Q. Well, so I'll go back to my question.
Assume that talcum powder products contain asbestos, then they contain a Group 1 carcinogen, right?
MS. CURRY: Object to form.
THE WITNESS: You know, we're sort of tying all these things together. I already explained that I disagreed with IARC's definition of at least its role of -- outside of those heavy occupational exposures, which are the only studies that they cite which shows an increased risk of ovarian cancer.
So you're saying would IARC consider that in talc as a carcinogen, the asbestos, and I'm saying yes, they considered -- in your supposition, would asbestiform talc be considered a

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Group 1. I would say according to IARC, yes.
I'm just clarifying to say that the whole point of me being here is to give an opinion whether that supposition that you just said, if there is asbestos in Baby Powder, Johnson & Johnson's product, is that a carcinogen?
And my answer would be no, because I don't see convincing -- and we're going to go through I'm sure all the reasons that I don't believe that. But I don't believe that it proves that it's a carcinogen.
BY MS. GARBER:
Q. So then, you disagree with IARC that asbestos is not a Group 1 carcinogen?
MS. CURRY: Object to form.
THE WITNESS: No. You're oversimplifying my statement. And I can't believe it's to really

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clarify my opinion, because my opinion is really, I think, clearly what I'm stating.
I'm saying that asbestos and its relationship to ovarian cancer has been clearly shown in a few very unlikely situations ever to happen again. And those are those prospective cohort studies.
I'm saying that IARC, extending that outside of those situations that they have not studied, that's when I'm going to go to what are people actually using in that bottle.
And if that's asbestos in that bottle, I'm closing this book, and I'm opening the talc monograph, because that -- all the studies that they discuss in that talc monograph are these products, the Johnson & Johnson products.
I would be going to the case-control studies in my report.

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I'd be going to the prospective trials in my report.
I don't understand why we would use such an indirect comparison, finding something in this book to help us figure out does that product cause cancer when there's been so much research using what's in that bottle that have results.
BY MS. GARBER:
Q. Doctor, my question was just way more broad than what -- what you're answering.
Do you agree with IARC that asbestos is a Group I carcinogen? I didn't mention ovarian cancer. I said do you agree with IARC that asbestos is a Group I carcinogen?
MS. CURRY: Object to the form.
THE WITNESS: Yes. In certain settings.
BY MS. GARBER:

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Q. And so now if we put a Group I carcinogen in a bottle of talc, then the corollary is that the bottle of talc contains a Group I carcinogen, right?
A. That would be true.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Thank you.
So let's mark your notice of deposition as Exhibit 5.
(Document marked for identification as Exhibit Holcomb-5.)
BY MS. GARBER:
Q. Doctor, we've marked as Exhibit 5 your notice of deposition for today's proceeding. Did you review this before today?
A. At some point I did.
Q. When did you review it?
A. When?
Q. Mm-hmm.

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A. When it was first produced.
Q. And did you review the documents --
MS. GARBER: And I understand you've made objections, Ms. Curry.
BY MS. GARBER:
Q. But did you review the documents that we asked you to produce?
A. Yes.
Q. And did you endeavor to comply with that and provide those documents?
A. Yes.
Q. And have you brought with you Item 3, a copy of your complete files as they relate to the work done concerning talcum powder litigation?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. And where is that file?
A. In my report.

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Q. Your file for this matter is your report?
A. Yes.
Q. Does it consist of anything else?
A. Does my report consist of anything else?
Q. No.
Is it your testimony, Doctor, that your file in this matter in the MDL consists of your expert report, which is dated February 25, 2019?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. You don't have any other documents?
A. No.
Q. And do you have any document -- any scientific literature that consists of your file?
MS. CURRY: Object to the form.

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THE WITNESS: I don't understand your question.
BY MS. GARBER:
Q. You've reviewed a number of studies that appear on the reference lists attached to your expert report, correct?
A. Correct.
Q. Where physically are those literature?
A. When you say where physically?
Q. Mm-hmm.
A. The -- I -- I did most of my -- almost all of it electronically.
Q. You didn't receive hard copies of any documents?
A. The expert reports I received as a hardcopy.
Q. What about with regard to published literature. Did you review any -- did you receive any hard copies of those?
A. Not for the MDL.

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Q. You did receive hard copies from the Ingham matter, correct?
A. I did. And I quickly asked for electronic copies.
Q. And did you make any notes on those 61 studies that you received in connection with Ingham?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. With regard to the literature that you reviewed in connection with this matter, did you make any notes electronically on the data?
A. No.
Q. Do you have the data saved in a certain file in your computer?
A. Yes. I imagine it's probably somewhere in my download list, in my download area.
Q. Like a DropBox?
A. No. I'm saying like if it was sent electronically, when I

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downloaded it, I would imagine it must be in the download part of my computer.
Q. Have you -- I don't understand when you say download of a computer, where that would be?
A. If you get a ZIP file, and you open it, it's actually downloading stuff to your computer.
Q. I understand. Okay.
Have you produced all documents that relate to your compensation for expert work in this matter?
A. Yes.
MS. CURRY: Subject to the objections.
BY MS. GARBER:
Q. And have you produced all references that identify facts, or data that Johnson & Johnson lawyers provided you and you considered in formulating your opinions?
A. Yes.
Q. Are there any assumptions

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that Johnson & Johnson provided you that you relied upon in forming your opinions?
A. No.
Q. Relating to your opinions as set forth in your February 25, 2019, litigation report, have you made any assumptions?
A. Please repeat that?
Q. Sure. Relating to your opinions in your expert report in this matter, have you made any assumptions?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. Do you assume, in coming to your causation opinions regarding talcum powder products, that they are free of asbestos?
A. I don't have an opinion on it.
Q. Do you have an opinion as to whether Johnson & Johnson products, talcum powder products, are free of

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fibrous talc?
A. No, I don't have an opinion.
Q. Do you have an opinion if Johnson & Johnson talcum powder products contain heavy metals like nickel, chromium, cobalt and the like?
MS. CURRY: Object to the form.
THE WITNESS: I don't have an opinion.
BY MS. GARBER:
Q. Do you have an opinion whether Johnson & Johnson talcum powder products contain carcinogenic fragrances?
MS. CURRY: Object to the form.
THE WITNESS: No, I don't have an opinion.
BY MS. GARBER:
Q. In the Ingham matter, you had no opinion whether Johnson & Johnson's talcum powder products contained asbestos at any point, right?
A. I didn't have an opinion,

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no.
Q. Is that still the case?
A. Still the case.
(Document marked for identification as Exhibit Holcomb-6.)
BY MS. GARBER:
Q. I'll mark as Exhibit 6 the production that was made, I think, the 25th.
Doctor, this is a single document that is printed on both sides, and we'll start with the side that is titled "Expert Report of Kevin Holcomb For General Or Causation Daubert Hearing, Supplemental Materials Received and Reviewed By Dr. Kevin Holcomb."
Doctor, is this the supplemental materials that you reviewed after you issued your expert report?
A. Yes.
Q. Do you need to add any further documents to this list to make it accurate?

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A. No.
Q. And when did you review the scientific studies that are listed there?
A. When you say scientific?
Q. Aside from the depositions and expert reports, when did you review each of those papers that are listed there, specifically Items 1, 2, 8, 9 and 10?
A. That came after reading Dr. Saenz's deposition. So I don't know. Maybe about a week, week and a half ago.
Q. Okay. And then if we turn the document over, does this reflect an invoice issued by you on March 25th, 2019, to Johnson & Johnson for expert services?
A. Yes, it does.
Q. And it indicates as to the description for literature review, drafting of expert report, and preparation for deposition; is that correct?
A. That's true.

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Q. And it lists 95 hours of expert work?
A. Yes, it does.
Q. And at a rate of $850?
A. Yes.
Q. And so you've invoiced Johnson & Johnson for $80,750, right?
A. That's correct.
Q. Have you been paid?
A. No.
Q. And are there any other hours that you intend to invoice Johnson & Johnson for?
A. Yes.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. And how many hours would that entail?
A. Depends on how long we go today and the few hours yesterday.
Q. How many hours yesterday?
A. Maybe about four.
Q. And do you intend to bill

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Johnson & Johnson for any work in preparation of today's deposition before the deposition started today?
A. No.
Q. Do you have a different rate for your deposition --
A. No.
Q. -- as opposed to other work that you do?
A. No.
Q. How much money were you paid with regard to your work in the Ingham case?
A. In total, it was $100,300.
Q. And so in connection with your work today for Johnson & Johnson in connection with talcum powder products, ovarian cancer litigation, you have thus at least invoiced and/or been paid for roughly 183 -- almost $184,000; is that fair?
MS. CURRY: Object to the form.
THE WITNESS: No.

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BY MS. GARBER:
Q. How much?
A. You said invoiced and been paid?
Q. Yeah, so, so you have to date earned $103,000, correct?
A. Correct.
Q. And then you've invoiced Johnson & Johnson for $80,750, correct?
A. Correct.
Q. Plus the hours that you just mentioned?
A. Correct.
Q. Is that the totality of the compensation that you have received, or will receive up through today's deposition?
A. That is.
Q. Thank you.
(Document marked for identification as Exhibit Holcomb-7.)
BY MS. GARBER:
Q. I'm going to mark your

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expert report in the MDL as Exhibit 7.
You signed this document on February 25, 2019, correct?
A. Correct.
Q. And this is your litigation report attendant to the MDL talcum powder products litigation, correct?
A. Correct.
Q. Have you endeavored to have this litigation report published in any scientific journal?
A. No.
Q. Can you describe the process you used in developing the opinions contained in this report?
A. Yes. I started, again, by reviewing epidemiologic data. I reviewed both case-control and cohort studies. I looked at -- well, I guess my methodology would really be following Bradford Hill's methodology, because in reviewing that data I looked at the strengths of associations.
I tried to rate the studies

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with some degree of how strong I thought the studies were, how subject they might be to spurious results.
I looked to see if there was consistency. I looked to see if there was a biologic plausibility that involved mainly looking at migration issues. And then in a totality came up with my opinion about the ability of talc to cause ovarian cancer.
Q. If we turn to your references which appear beginning at Page 25 through 33. And in addition the supplemental references, there are more than the 61 references that you had in connection with the Ingham trial, correct?
A. Yes.
Q. Did you request any other documents or literature from counsel?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:

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Q. And is it accurate that all of the documents that are listed on your reference lists, which include what's attached to your report and the supplemental, were all provided to you by counsel?
MS. CURRY: Object to the form.
THE WITNESS: No. Some of these I came up with on my own. I don't remember exactly which ones. But it's not all provided by counsel.
BY MS. GARBER:
Q. Is there anything you reviewed but did not rely upon in forming your opinions?
A. No.
Q. Are there any materials that you relied upon in forming your opinions that are not listed in your reference lists that we've reviewed?
MS. CURRY: Object to the form.

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THE WITNESS: Other than what I've already told you that I came across in expert reports.
BY MS. GARBER:
Q. And in drafting your expert report, you have not made any notes; is that correct?
A. If you mean written, no. I would -- as the manuscript was being produced, I would make points. But it all became incorporated in the end into a final product.
Q. What was the process by which you developed your report? Did you read a study and then make some notes or mental notes, or write? Tell me the process by which you --
MS. CURRY: Object to the form.
THE WITNESS: I typically worked with two monitors. And one I'm writing the manuscript. The other one, I'm bringing up papers.
BY MS. GARBER:

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Q. Okay. So there's no notes that you made before you started to sit down and write your expert report; is that correct?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. It's not correct?
A. There are no notes.
Q. There are -- thank you.
Did you read every word of the documents listed in your reference list?
A. Yes.
Q. Did you -- when you said you obtained some of the references, is that limited to reviewing exhibits from expert reports or depositions?
A. No.
Q. Did you conduct any searches, say, Medline searches or PubMed searches?
A. I did.

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Q. What were your -- what was your search engine?
A. PubMed as you mentioned. Sometimes Google.
Q. And what were your search terms?
A. Ovarian cancer, talc, perineal talc and ovarian cancer, body powder and ovarian cancer. It depended what I was looking for.
There was some points I'm making in my expert report where I'm using analogies. And so I was looking at HPV and cervical cancer or herpes simplex virus and cervical cancer. And so it -- it depended on what I was -- what I was looking at at the moment.
Q. What did you do, Google searches?
A. I'm guilty of using Google from now and then to start a search. It's sometimes faster. It will bring up PubMed articles.
Q. Did -- have you read, since

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the production of your supplemental reference list, have you read any other expert reports or depositions or other studies?
A. Since?
Q. Since the production of your supplemental expert report which was marked as Exhibit 6.
MS. CURRY: Object to the form. You mean supplemental materials received list?
MS. GARBER: Yes.
THE WITNESS: Only -- let's see. Yes, there's one other -- one other paper, and that was a migration paper. But I believe it just came out. It was --
BY MS. GARBER:
Q. What's the title?
A. I don't remember.
Q. Or the author?
A. It was -- I don't know who is the first author. I know --
Q. Can you give me any authors?

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A. Cramer was -- was involved. I don't remember the first author though.
Q. What was the nature of that paper?
A. It was --
MS. CURRY: Object to the form.
THE WITNESS: It was a paper looking at an attempt to try to differentiate contamination from actual migration of talc particles.
BY MS. GARBER:
Q. What did you glean from that paper, Doctor?
MS. CURRY: Object to the form.
THE WITNESS: The biggest thing that I gleaned was that contamination is -- it's probably even more widespread than I realized. And I appreciated the effort to try to distinguish between the two, but I wasn't

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convinced that you can necessarily.
BY MS. GARBER:
Q. Did the authors there attempt to distinguish surface contamination from talc that was deeply embedded in the tissue?
A. Well, they were only looking at lymph nodes from my memory. So they were trying to distinguish between particles on the surface and particles that are in, deeper inside the lymph node itself, yes.
Q. Does that paper provide a basis for any of your expert opinions today?
A. No.
Q. You did not rely upon -- you do not rely upon the Cramer -- we'll call it Cramer contamination paper -- for purposes of your expert opinions; is that fair?
A. That's fair.
Q. Did you read any other

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expert reports or depositions after the supplemental reference list?
A. No.
Q. And it is accurate that prior to signing your expert report on February 25, 2019, you had not read the recent Saed 2019 paper with regard to a molecular basis supporting the association of talcum powder use with increased risk of ovarian cancer, right?
MS. CURRY: Object to the form.
THE WITNESS: I'm sorry, can you repeat the question again? Prior to --
BY MS. GARBER:
Q. Sure.
Prior to signing your expert report on February 25, 2019, you had not read Dr. Saed's 2019 publication, correct?
A. That's true.
MS. CURRY: Same objection. Sorry.

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BY MS. GARBER:
Q. Prior to signing your expert report on February 25, 2019, likewise you had not read Dr. Saed's abstract with regard to talc and ROS induction, correct?
A. That's true.
Q. You indicate at Page 20 --
MS. CURRY: Do you need a break?
THE WITNESS: Well, I wasn't sure if I -- it looks like we're going to be close to lunch so...
We'll be planning on breaking around 12 or --
MS. CURRY: Sorry. I thought he had a message from the hospital, so I wanted to make sure if he needs to take a break. We've been going over an hour, Susan, so whenever is a good time for you.
MS. GARBER: You want to take a break? Whenever you

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guys --
THE WITNESS: I'm fine for a break.
MS. GARBER: You want to take a break?
THE WITNESS: Yeah, I'd appreciate it.
MS. GARBER: Okay.
THE VIDEOGRAPHER: Please remove your microphones. The time is 11:28 a.m. Going off the record.
(Short break.)
THE VIDEOGRAPHER: Okay. We are back on the record. The time is 11:42 a.m.
BY MS. GARBER:
Q. Doctor, you state at Page 22 of your report that plaintiffs' expert gynecologic oncologist conducted a selective review of the study on biologic mechanism.
What studies do you contend --

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A. Could you -- could you point -- I'm not sure where you're reading from.
Q. From Page 22 of your expert report.
A. Right, where -- I'm just looking where on the page it says this.
Q. At the first full paragraph.
MS. CURRY: I'm not seeing it there either.
THE WITNESS: I see where you're saying.
You're saying, "Such selective review of studies is clearly conclusion driven."
Q. Yeah, okay. So what -- what studies do you believe were omitted from the expert -- from the plaintiffs' experts?
MS. CURRY: Object to the form.
THE WITNESS: There's animal studies showing no ascension of -- of particles and -- and they --

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they do acknowledge that, but they don't -- they don't describe it. They just say considered limited evidence to the contrary and find it non-persuasive.
My review of the literature on this topic, I was looking for some studies showing that you could dust the human vulva with talc and show that those particles can make it to the ovary, and I couldn't find a single study in that situation.
You could place particles in the vagina. You can give a patient oxytocin. You can do some -- you know, different -- different than the majority of the use of these products.
And so I -- I came to the conclusion that their -- their approach was conclusion driven, just because it seemed to me, if you've never seen a study that

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shows it's possible, and then you just say well, the -- the studies that I did say that it doesn't happen in an animal model, I don't -- I'm not persuaded by that.
BY MS. GARBER:
Q. What animal studies did you review with regard to migration?
A. Yeah, I'd have to look back and see was -- whether it was the -- the rat model or the pig model. But there were definitely animal model studies.
Let me just show you. It's in the -- in the talc monograph, if you want me to, I can go back through and -- and find the citations of --
Q. That's okay, Doctor.
I want to know what animal studies you think plaintiffs' experts should have looked at in connection with migration.
A. Well, it's exactly my point. What I'm saying is the study they should

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look at would be the study where someone dusted the human perineum with talc and showed that it was able to reach the ovary, and that doesn't exist. So that would be the best thing to look at.

The studies that I mentioned to you, which I can go back to the talc monograph and find, I don't remember if it was Sprague rats or if it was actually pigs or guinea pigs. There was a couple of animal models where they were not able to show migration from the vagina, not -- much less the perineum.

Q. It's your testimony that plaintiffs' experts didn't look at a human study that dusted the perineum with talc and it was shown to migrate to the ovaries, and you're critical of that even though such a study does not exist?

MS. CURRY: Object to the form.

THE WITNESS: You know, I guess what you can be critical of, and I'd have to admit to that is,

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I'm saying such selective review -- and I guess that's not what's being selective here. What's being selective is what you consider persuasive or not.

It's not the review. It's the absence of such a study. And then not finding the studies on animal models that don't show ascension as not being persuasive.

BY MS. GARBER:

Q. Doctor, I reviewed your reference list, and I can find about three studies with regard to the issue of migration. And my question to you is, did you do a comprehensive review of the literature with regard to the ability of talc to migrate from the genitals to the perineum --

MS. CURRY: Objection.

BY MS. GARBER:

Q. -- or to the ovaries?

MS. CURRY: Object to the form.

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THE WITNESS: I'm not sure what you mean by comprehensive. I will tell you that the studies that I do cite, for example a study like Heller, where there's no correlation between the presence of talc in someone's ovaries and the reported use of talc, which I'm sure the plaintiffs' experts have seen, should give them reason to pause if they've never been able to show it in a human model that it can happen.

And then you see studies like that that say there's no correlation between reported history and the presence of talc in the ovaries, that it should make you -- it should make you wonder.

And I wouldn't be so dismissive of the studies that are to the contrary. I mean, they're

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mentioning, "Reviewed the small body of literature suggesting migration of particles does not occur." So they're admitting that there is a body of literature that shows that it doesn't occur.

BY MS. GARBER:

Q. Doctor --

A. You can go --

Q. Doctor, if you can --

MS. CURRY: Are you finished with your response?

THE WITNESS: Yeah.

BY MS. GARBER:

Q. Can you turn to Page --

A. Can I finish my answer? So --

Q. You can finish.

A. Thank you.

So the statement that says, "I've reviewed the small body of literature suggesting that migration of particles does not occur," they're describing that body of literature as

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small. And I'm saying that there is no body of literature showing that perineal dusting of talc gets to the ovaries.
So you're comparing small to none, but you find the small non-persuasive.
Q. Doctor, if you can turn to Page 16 of your expert report. There is a section on Page 16 titled "Migration of Talc Particles," correct?
A. Yes.
Q. And you mention the Wehner paper, correct?
A. Yes.
Q. And do you know what -- was that an animal study or human study?
A. That was animals.
Q. All right. And then you mentioned the Heller study. Was that a talc migration study? In other words, was talc placed at the genitals and looked to see if it travels?
A. No.
Q. Okay. And then you also

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mentioned the Cramer study, right, the 2007 study?
A. Yes.
2007, you said?
Q. Yes.
A. Oh, yes, yes.
Q. And then if we turn the page over, you also mention the Gertig study; is that right?
A. Yes.
Q. And then you mention the Terry study?
A. Right.
Q. Doctor, did you look at any of the human studies where particulate was placed at the genitals or in the genitals and the ability to migrate?
A. What particular particulate are you talking about?
Q. Any particulate.
A. Yes. And I saw in expert -- for example, in Dr. Birrer's report, I believe he discusses a study of carbon. But I think it's really important if

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you're going to develop a model to say --
Q. Doctor, sorry, I'm just going to cut you off.
A. Sure.
Q. My question was did you -- it was just a really simple question. Did you look at any other human studies. And the answer was yes?
A. Yes.
Q. And then you mentioned one study; is that right? Were there any other studies?
MS. CURRY: Object to the form.
THE WITNESS: I would have to go back and remind myself of how many, but it was more than one.
BY MS. GARBER:
Q. Do you have any other criticisms of plaintiffs' gynecologic oncologists and the claim that they selectively reviewed studies? Any other criticisms as to the body of literature?

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A. I do.
MS. CURRY: Object to the form.
THE WITNESS: I do. I looked at the literature in totality. So if you just restrict to the epidemiologic data, I looked at the case-control studies. I spent a fair amount of time going through those, looking for consistency and things like that.
And then I looked at the cohort studies, which as you see in my report I explain why they may -- they are generally considered to be less prone to bias.
And then I read Dr. Clarke-Pearson's report where he almost -- I don't even think he mentioned the cohort studies, which to me was an important thing that you'd have to explain away if

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you really believe that talc causes ovarian cancer.
I did -- as I mention, I think they take as a given that talc can migrate. And they're not alone in this. I don't -- I don't think that they're alone in doing that. I read a number of papers that in the introduction will make statements like, "We all know talc can get to the ovaries," and then offer no citation for it.
And so I take issue with that as well.
BY MS. GARBER:
Q. Doctor, I didn't ask you for a full list of your opinions.
A. I thought you did.
Q. I asked you --
A. You asked me what areas do I disagree with them.
Q. Okay. And you mentioned --
MS. CURRY: Please let him finish his response. You've cut

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him off twice now.
MS. GARBER: That's because he's talking in very large paragraphs, and we're never going to get anywhere if I don't.
MS. CURRY: If you ask these broad, open-ended questions, he's entitled to respond to it.
MS. GARBER: All right. I'll ask a different question.
BY MS. GARBER:
Q. Doctor, did you review the Buz'Zard 2007, Shukla 2009 papers?
A. Only with regard to the expert reports.
Q. They're not on your reference list, are they?
A. No.
Q. And you did not review the Saed 2019 prior to signing your expert report. We've already established that, right?
MS. CURRY: Object to the form.

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THE WITNESS: That's correct.
BY MS. GARBER:
Q. And those papers relied on plaintiffs' experts in support of their biologically plausible mechanism of carcinogenicity, true?
A. Yes, that's true.
Q. And in Page 23 of your report you state, "I understand that there are a number of irregularities in Dr. Saed's work and his lab notes."
What is your source of that statement?
A. Dr. Birrer's expert report.
Q. When did you read Dr. Birrer's expert report?
A. I'm trying to think. Probably about maybe two weeks ago.
Can you tell me what you're referring to though?
Your -- your statement. You said you -- I made a -- a referral to something about Dr. Saed, but you didn't

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tell me where to find it.
Q. I just asked you generally, Doctor.
You -- you made mention that -- that his work and lab notes --
A. I'm just asking where you're reading from, if you can --
Q. At Page 23, Doctor.
A. 23. Thank you.
Q. So what's your source of that statement?
A. Hold on one second.
Q. If you don't know, we'll move on.
MS. CURRY: Just give him a second to look at where you're reading from.
THE WITNESS: I just want to get to -- yeah.
BY MS. GARBER:
Q. It's at the top of 23.
A. I don't remember exactly.
Q. All right. Did you -- I -- I noted that his lab notebooks were not

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on his reference list. You didn't look at those, did you?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. You haven't looked at all of his work relating to talc and mechanism of carcinogenicity, right?
A. No.
Q. And with regard to your reference list, you haven't reviewed Health Canada's draft screening assessment with regard to talc dated December of 2018, correct?
MS. CURRY: Object to the form.
THE WITNESS: I did.
BY MS. GARBER:
Q. Sorry?
A. I did.
Q. You did review it?
A. It's one of Dr. Saenz's exhibits.

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Q. Okay. And it's not listed on your reference list, correct?
MS. CURRY: Object to the form.
THE WITNESS: I'd have to look through the reference list -- no, it was something that I reviewed as part of Dr. Saenz's exhibits.
BY MS. GARBER:
Q. So you have reviewed Health Canada's December 2018 draft report?
A. It's part of Dr. -- it's part of Dr. Saenz's exhibits and I have reviewed it.
Q. When did you review that?
A. Maybe about a week ago.
Q. Okay. Have you read any comment letters or reports issued in response to the Health Canada DSAR?
A. No.
Q. Have you been asked to provide any comment to Health Canada?
A. No.

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Q. Are you planning to provide any comment?
A. What I reviewed was a draft. So I'm not sure what Health Canada is going to finally decide to publish. So no, I didn't -- I didn't --
Q. Do --
MS. GARBER: Motion to strike as nonresponsive.
BY MS. GARBER:
Q. Doctor, I asked you, are you planning to provide any comment to Health Canada?
A. I'm saying perhaps I would if I saw a final product that I thought was really egregious, but I've only reviewed a draft and so I -- I can't say whether I would or not.
Q. Doctor, do you understand that Health Canada has asked for public comment?
A. I didn't -- no, I wasn't aware of the process.
Q. Okay. Have you ever been

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asked to testify at any United States or state government proceedings with regard to talcum powder products?
A. No.
Q. And you are not conducting any research, experimental research in any capacity concerning talcum powder products and ovarian cancer, right?
A. No.
Q. Are you planning to?
A. No.
Q. Have you ever applied for a grant or monies to conduct a research on talcum powder products and ovarian cancer?
A. No.
Q. Have you read the Taher 2018 meta-analysis?
A. I have.
Q. Yes?
A. Yes.
Q. When did you read that?
A. Same day I read the Health Canada assessment.

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Q. And that was not on any of your -- the Taher 2018 meta-analysis was not listed on any of your reference lists, correct?
A. It is --
MS. CURRY: Object to the form.
THE WITNESS: It's also part of the exhibits for Dr. Saenz.
BY MS. GARBER:
Q. Could you go back to Exhibit 6, please.
Doctor, you understand that your reference lists provide me an opportunity to know what literature you have reviewed and relied on attendant to your expert opinions, correct?
A. That's correct.
Q. And if you look at Item 5 of Exhibit 6 which is your supplemental materials?
A. Yes.
Q. Could you read Number 5 for me, please?

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A. It says, "Expert report of Cheryl Saenz, M.D., February 25, 2019."
Q. It doesn't say exhibits, does it?
MS. CURRY: Object to the form. Number 3 discusses the deposition.
BY MS. GARBER:
Q. Is that what it says, Doctor? Does it say exhibits there, sir?
MS. CURRY: Object to the form.
THE WITNESS: It clearly doesn't say exhibits. Number 3 is where it says exhibits, so I'm not sure why you're having me read all of 5, when it clearly says on Number 3, "Deposition of Cheryl Saenz, M.D., and exhibits, March 13, 2019."
BY MS. GARBER:
Q. Okay. Doctor, have you spoken with any of the Taher study authors?

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A. No, I have not.
Q. And your expert report contains Table 1, correct?
A. Yes.
Q. And what is the nature of Table 1?
A. Table 1 --
MS. CURRY: Table 1 in the copy that you marked is actually cut off.
Do you have a full version of it?
MS. GARBER: I do. It's -- it's buried. But I'm going to mark it, so...
BY MS. GARBER:
Q. Are you able to tell me what Table 1 contains?
A. Yes.
Q. And what it is?
A. Table 1 is a list of case-control studies that I reviewed in regard to this matter.
Q. Why did you create this

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list?
A. One, I wanted to show that I performed a comprehensive review. But I guess largely what I saw mentions over and over again by plaintiffs' experts and sometimes in other papers, the statement that the epidemiologic data consistently shows an increased risk of -- of ovarian cancer with talc exposure. And I think most people already know that that's only with case-control studies and none of the cohort studies if you include Gates and then update to Gertig.
So then I wanted to look at the case-control studies. And to see could somebody use that term consistently, maybe loosely, and what I consider consistent and they consider consistent different.
And so I looked through this list of case-control studies. I looked at those that showed a positive association and had a 95 percent confidence interval that would suggest it

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was statistically significant. And I wanted to see what percentage of them, that were not duplicates of the same dataset actually showed this association.

And so my -- my review of this list of case-control studies was that -- I don't -- it came out to be about 50/50 with a positive association. Because I wanted to find out, would -- would anybody call, you know, a 50/50 chance consistent.

Q. So you created Table 1 to show or to support your claim that the case-control studies were inconsistent based on statistical significance.

Is that fair, Doctor?

MS. CURRY: Object to the form.

THE WITNESS: That's fair.

BY MS. GARBER:

Q. Okay. Exhibit A at the back of your expert report is your CV, right?

A. Yes.

Q. When did you last update it?

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A. I believe this is the most recent copy. Let's see.

Let's see. This last paper is from January 2019, probably like February or maybe early March.

Q. Do you need to make any amendments to make it accurate today?

A. I have a few more accepted publications, but they are not up on PubMed, so I don't think so.

Q. Do they concern ovarian cancer?

A. No. Oh, hold on. I'm sorry.

Yes.

Q. In what capacity?

A. There's one study, which deals with early detection of ovarian cancer where we looked at vaginal fluid as a potential biomarker for women who have an adnexa mass to pick up whether they have ovarian cancer. And we looked at a chemical called LPA, lysophosphatidic acid, and showed that

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its levels were higher in women who specifically had clear cell carcinoma.

Q. Do any of the publications that do not appear on your reference list concern any of the issues that you deem relevant in this case?

MS. CURRY: Object to the form.

THE WITNESS: Please repeat that.

BY MS. GARBER:

Q. Do any of the publications that do not appear on your CV, bibliography, do any -- are any of those relevant as you deem them to the issues in this case?

A. I just wanted to clarify. You're asking if any of the papers that I'm a co-author or author on relevant to this topic?

Q. That do not appear on your CV?

A. That do not appear on my CV?

Q. Yes. The ones that you say

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that are not published yet.

A. Oh, no.

Q. No, they do not concern --

A. No, they do not concern talc and ovarian cancer.

Q. Do you consider yourself a research cancer biologist?

MS. CURRY: Object to the form.

THE WITNESS: No, I would consider someone who does mainly basic science research a biologist.

BY MS. GARBER:

Q. You don't conduct in vitro studies as part of your practice, right?

A. If you see my CV, you'll see some studies that involve in vitro studies. So I collaborate with Ph.Ds. So I'm part of a research team that does perform --

Q. But you don't do the bench work, do you?

A. I'm not doing the bench

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work, no.
Q. All right. And you don't have any degrees in epidemiology, right?
A. No.
Q. Did you review any internal documents of defendants in this case that were produced attendant to this litigation?
A. No, I have not.
Q. And do you understand that United States Senate seeking internal company documents relevant to their investigation as to whether Johnson & Johnson has misrepresented the truth about asbestos content in their talcum powder products?
A. I am aware.
Q. You understand that the public, which includes scientists, are not normally allowed to review internal company documents because manufacturers like Johnson & Johnson mark them confidential and disclosure can result in violation of a protective order? Do you

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understand that?
MS. CURRY: Object to the form.
THE WITNESS: No, I --
BY MS. GARBER:
Q. Do you understand how that works?
A. No, I didn't know that.
Q. You do?
A. I don't know that.
Q. Okay. Do I now have a full list of the documents that you considered in formulating your opinions as referenced in your expert report and supplemental materials?
A. Yes.
Q. Do you understand, Doctor, that I'm entitled to know the literature that you considered and the foundation for your opinions?
A. Yes.
Q. And while you don't agree with plaintiffs' causation opinions that you reviewed, you do acknowledge that

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their opinions were based on informed scientific medical judgment?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. You disagree with that?
A. No.
Q. Pardon?
A. I disagree with it.
Q. Which experts -- and I don't need to know why. Which experts do you think of uninformed scientific opinions?
MS. CURRY: Object to the form.
THE WITNESS: I would say Dr. Clarke-Pearson, Dr. Judith Wolf, Ellen Blair Smith.
BY MS. GARBER:
Q. Any others?
A. No, I would restrict it to that.
Q. Okay. And your criticisms of those particular doctors as referenced

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in your expert report, does that consist of -- strike that.
The opinions with regard to plaintiffs' experts, Dr. Clarke-Pearson, Wolf, and Blair Smith, your criticisms of those experts are contained within your expert report; is that fair?
A. That's fair.
Q. Do you agree that experts must use scientific judgment when assessing the literature for causality?
A. Yes, I do.
Q. And in assessing the literature, one person's scientific judgment may be different than another person's scientific judgment?
MS. CURRY: Object to the form.
THE WITNESS: I believe scientific judgment has a role, but I believe that there are things that are right and wrong as well. And I gave you an example of one of them, which was it's

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wrong to say that something is consistently shown to be associated with something if it's not consistently shown.

And -- and I think for statements like that, you can rely on what the general population would consider consistency, or just any reasonable person. So if someone says something is a hallmark of a disease, and there's no good evidence that it is even a part of the disease, then, you know, that's not a judgment call at that point. That's the difference between a misstatement and a -- it's just a misstatement.

BY MS. GARBER:

Q. We will get to the issue of consistency, Doctor.

In addressing -- or in assessing -- strike that.

Do you agree that experts can reasonably weigh factors differently?

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MS. CURRY: Object to the form.

THE WITNESS: What I was trying to get at, and I was hoping that we would be able to cover this quickly, but probably not.

That --

BY MS. GARBER:

Q. Doctor, just yes or no. And you're --

A. I need -- no --

Q. -- going to have an opportunity for your lawyer to ask you questions.

A. But ma'am, if you ask a question --

MS. GARBER: Object to form.

BY MS. GARBER:

Q. I will withdraw the question.

A. Okay.

Q. Doctor, with regard to methodology, will you please point me to the methodology section in your report

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that informs the reader of the methodology that you employed to render your opinions.

A. I would have to point to my description of the Bradford Hill criteria.

Q. Where does that appear?

A. I'll find it for you.

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Q. Doctor, is that a methodology section? I asked you specifically if you could point me to the methodology section.

A. No. That does -- that is not a methodology section.

Q. And, in fact, you don't have a methodology section in your report, do you?

A. I don't have a --

MS. CURRY: Object to the form.

THE WITNESS: I don't have a specific section labeled methodology, no.

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BY MS. GARBER:

Q. And, in fact, in the four corners of your report you do not state anywhere the methodology that you employed in coming to your opinions. Is that also a true statement?

MS. CURRY: Object to the form.

THE WITNESS: Throughout my report, within the four corners one could see the methodology I'm using. And then I go onto explain where I got that methodology with Bradford Hill.

BY MS. GARBER:

Q. Doctor, you understand the methodology is important so that opinions can be replicated, right?

When you're reviewing a study, there's a methods section, so that the evaluation can be replicated. You understand that, right?

A. Yes.

MS. CURRY: Object to the

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form.
BY MS. GARBER:
Q. You don't have a methodology section in your report where --
A. I do not.
Q. Thank you.
Doctor, if we could move onto your statements about plaintiffs' criticism of not reviewing the totality of the literature.
I want to ask some questions of you.
You did not review the totality of the literature relating to biologic plausibility, because you did not review the Shukla, Buz'Zard, Saed references before rendering your expert opinion in the case?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. In -- in this case. Do you agree with that?
MS. CURRY: Object to the

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form.
THE WITNESS: I believe that even though it's -- I didn't have a methodology section, I did approach this in a method -- methodical way --
BY MS. GARBER:
Q. Doctor, I didn't ask you about your methodology.
A. If I -- if I can finish my answer, please.
MS. CURRY: Please stop cutting him off.
THE WITNESS: So --
MS. GARBER: Motion to strike.
BY MS. GARBER:
Q. My question was about Shukla, Buz'Zard and Saez --
MS. SHARKO: You have to let him finish his answer. You are not allowed to interrupt. Now be polite please.
THE WITNESS: With regard to

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the studies that you're referring to, I did not specifically mention those studies at the time that I presented my opinion, because my view of the Bradford Hill criteria was that there's a reason why the first one is strength of association and the second is consistency. And that I felt that my reasoning showing the inconsistencies there, that it's -- it's an interesting question to look at biological plausibility and -- and -- but when you have such weakness in the epidemiologic data, I did not spend as much time going through the biologic plausibility other than to the degree that I did, because I think -- and it's full of weaknesses there as well.
But no, my opinion, just even based on the epidemiology is -- is that there isn't a

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consistent finding of an association with talc use and ovarian cancer.
BY MS. GARBER:
Q. Doctor, is it your testimony that if you look at the epidemiological literature and you find it weak, you don't then need to go on and review the biologic plausibility to render a causation opinion?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Is that your -- is that your opinion?
A. That is not my opinion.
Q. Okay.
A. And that's not what I'm saying.
Q. So -- and, Doctor, you did not review studies that looked at the biologic plausibility for talc and ovarian cancer which included Shukla, Buz'Zard, and Saed before signing your

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report, correct?
MS. CURRY: Object to the form.
THE WITNESS: I would argue that Buz'Zard is not --
BY MS. GARBER:
Q. Doctor, yes or no, did you review those or not?
MS. CURRY: Object to the form.
THE WITNESS: I don't --
MS. CURRY: Please let him finish his response.
THE WITNESS: You're -- you're looking for yes or no simple answers and you keep --
BY MS. GARBER:
Q. I'm not looking for paragraphs, Doctor.
A. -- but -- but you keep telling me that you're here to clarify my answers. But whenever I get started with an answer you cut me off, which makes me wonder are you really here to clarify my

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answers. Because I can explain to you.
Buz'Zard --
Q. I didn't ask you for an explanation. I asked you, were they listed, yes or no. And your answer was no --
A. Can you go back to your last question? Can you go back to the question?
Q. Doctor, you understand I'm here to ask questions and you're here to answer them.
A. I'm asking you to repeat your question.
MS. CURRY: Ms. Garber, you're not letting him answer the question. And please, you can't keep talking over each other.
MS. O'DELL: That's really not fair. If she's -- if she's asking whether the doctor has reviewed a study, that's a yes or no question.
She's not cutting you off.

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She's asking him to respond to the question.
And if Dr. Holcomb continues not to answer a question, it's an appropriate issue to take to Judge Pisano and that's what we're going to do. So -- so --
MR. MIZGALA: I want to insert here. Because you're not -- she's not just asking him yes or no about the studies. She's characterizing the studies in a specific manner and he disagrees with that. I think he should be able to explain that.
THE WITNESS: That's exactly my feeling about it. It's, the question is did I review the study --
BY MS. GARBER:
Q. Doctor, there's no question pending.
Did you --
MS. SHARKO: All right. So

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all prior questions are withdrawn.
MS. GARBER: No --
MS. SHARKO: She will now ask a question and hopefully she'll be polite and let you answer it. If we have to go to the judge about the constant interrupting that we've had over the last few days, then we will.
MS. O'DELL: We're here for the day. Not for the last few days. And the questions aren't withdrawn. You're welcome to pose a new question.
And -- and I wanted to say for the record the suggestion that Ms. Garber is not being polite is incorrect, Ms. Sharko.
MS. SHARKO: I disagree. But let's go on.
There's a lot of silence.
Are you going to ask a question, or are you waiting for the doctor to answer the --

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MS. GARBER: I'm going to -- I'm going to ask a question.
MS. SHARKO: Great. Thank you.
BY MS. GARBER:
Q. Doctor, you did not review Dr. Longo's testing of talcum powder products for the presence of asbestos, fibrous talc, heavy metals and the like, correct?
A. That's correct.
Q. And you did not present or discuss the study design limitations with the cohort studies. Do you agree with that, yes or no?
MS. CURRY: Object to the form.
THE WITNESS: Please repeat.
BY MS. GARBER:
Q. Did you -- you did not present and discuss the study design limitations of the cohort studies, yes or no?
A. I'd have to read through the

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report again. I don't remember.
Q. You can't answer that question?
A. I can't.
Q. Okay. Is it true, Doctor that you did not provide a word of analysis in your report regarding the contrary data to your causation opinion specifically with regard to Penninkilampi, Health Canada or the Taher paper?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Is that true?
A. Please repeat one more time.
Q. Your report does not provide a word of analysis regarding the contrary data to your causation opinion, specifically the Penninkilampi, Health Canada or Taher analysis of causation, correct?
A. No, I -- I mentioned Penninkilampi.

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MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Do you mention her reference -- his references with regard to causation?
MS. CURRY: Object to the form.
THE WITNESS: No. I reference his study, not his discussion section.
BY MS. GARBER:
Q. Okay. In your critique of plaintiffs' experts' opinions, you do not state the methodology used in coming to those opinions, correct?
MS. CURRY: Object to the form.
THE WITNESS: I do discuss the methodology that I used. I don't have a methodology section that you discussed.
BY MS. GARBER:
Q. You don't discuss the

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methodology that you employed in rendering critiques of plaintiffs' experts' opinions, correct?
MS. CURRY: Object to the form.
THE WITNESS: I just discuss and describe my critiques, yes.
BY MS. GARBER:
Q. Wouldn't you agree, Doctor, that there's medical consensus that the female genital tract is an open system to facilitate the passage of menses and promote retrograde movement of sperm?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. Let's talk about your opinions and be sure that I understand what they are.
These should be yes or no questions, not why.
Okay. Is it your opinion that the literature does not provide a

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biologically plausible mechanism whereby talcum powder products can migrate from a woman's genitals to her ovaries?
MS. CURRY: Object to the form.
THE WITNESS: Is it my opinion that it does not provide?
BY MS. GARBER:
Q. Correct.
A. The answer would be yes.
Q. Is it your opinion that the literature does not provide a biologically plausible mechanism whereby talcum powder products can induce chronic inflammation, resulting in ovarian cancer?
A. I believe that it proves that it can cause chronic inflammation. I don't believe that it's been proven that that causes ovarian cancer.
Q. Is it your opinion that talcum powder products do not increase the risk of developing ovarian cancer?
A. Yes.

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Q. And if talcum powder products contain asbestos, does that opinion change?
A. No.
Q. Is it your opinion that talcum powder products do not cause ovarian cancer?
A. I don't have an opinion. I'm sorry. Talcum powder is -- did you ask the same question twice?
Q. No. One was risk, one was cause.
A. Oh.
Q. Is it your opinion that talcum powder products do not cause ovarian cancer?
A. That's my opinion.
Q. Is it your opinion that there is no evidence that talc is associated with ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: No, that's not my opinion.

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BY MS. GARBER:
Q. Is your opinion limited to there's no credible evidence --
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. -- that talc is associated with ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: This is going to be tough for yes or no. I can't answer that with a yes or no.
BY MS. GARBER:
Q. Okay. As a gynecologic oncologist, you're a member of the Society For Gynecologic Oncology, right?
A. Correct.
Q. And you've served as a reviewer for the publications submitted to the Journal of Gynecologic Oncology, right?
A. Correct.

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Q. And I assume that you believe the journal -- the journal is a reliable source for study data generally?
MS. CURRY: Object to the form.
THE WITNESS: What's your definition of reliable?
BY MS. GARBER:
Q. What do you think it means?
A. I don't use that term reliable. So I wouldn't use that term.
Q. Do you read the journal?
A. Yes, I do.
Q. And the data that's contained therein generally, do you deem it reliable for what it provides or do you think it's not credible?
MS. CURRY: Object to the form.
THE WITNESS: Again, if you're saying I believe it's reliable, do I assume that everybody is honestly reporting what they found, that is a general

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assumption that we hold in academic medicine. And, yes, I make that assumption for gynecologic oncology.

There's no way for a reviewer or someone else to know if someone is giving you false information. We assume it's all valid and that they've not lied about anything. So is that what you mean by reliable?

BY MS. GARBER:

Q. Have you had an experience as a reviewer for Gynecologic Oncology where authors submitted false data?

A. What I'm saying is we don't ask for raw data. I've never -- let me say I. I have never asked a submitting scientist for their raw data so that I could look for irregularities. There is a general understanding that you are trusting the person is giving you their findings, and you're reviewing them with that understanding.

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Q. And based on the fact that you're a reviewer for Gynecologic Oncology, do you tend to trust the data presented in that journal?

MS. CURRY: Object to the form.

THE WITNESS: When you say -- unfortunately, when you say "trust" --

BY MS. GARBER:

Q. That was your word, Doctor.

A. You may disagree with the findings, but the word -- when I use the word "trust," that's why I keep on coming back to believing that what the person is giving you is valid, this is actually what they did, that they're not falsifying results. To that degree, I trust those results just as much as any other journal.

Whether I find the findings of every study valid, no. Just because it's in GYN Oncology does not mean that I take it as a valid study.

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Q. Okay. I'm going to show you a paper, Doctor. I don't believe it was cited in your expert report.

(Document marked for identification as Exhibit Holcomb-8.)

BY MS. GARBER:

Q. I'm going to mark as Exhibit 8 -- oh, sorry.

Doctor, this is a paper that is published in Gynecologic Oncology titled "Talc and Ovarian Cancer" by Steven Narod, the date of this study is 2016.

Have you read this paper before?

A. I've seen it before, yes.

Q. And when did you see it?

A. When it came out.

Q. Okay. Did you review it as a reviewer for --

A. No.

Q. Thank you. Let me -- let me get that clear.

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Did you review this paper prior to its publication attendant to your reviewer role from time to time with Gynecologic Oncology?

A. I did not review this paper before publication.

Q. Okay. Let's look at some of the statements that are therein.

If you look at, Doctor, the bottom of Page 2. The very last sentence at the bottom of Page 2.

And, Doctor, it reads: "In any case, given the number of hazard ratios reported in the literature" --

A. I'm -- I'm sorry, I'm looking for you. Bottom of 2.

Q. Doctor, you can look up here at the Elmo.

A. Yes.

Q. And see where I am. I'm at the bottom of 2, Page 2. Left-hand column.

A. Okay. Left-hand column. That helps. Okay.

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Q. And -- and it says, "This article about talc and ovarian cancer indicates in any case given the number of hazard ratios reported in the literature between 1.1 and 1.4 in both case-control and cohort studies, it would be disingenuous to state that there is no evidence that talc is associated with ovarian cancer."
Did I read that correctly?
A. Yes, you read it correctly.
Q. Yes or no, do you agree with that statement?
A. It's actually a question you already asked me and I agreed.
Q. Let's look at some of the other statements in this paper and see if you agree with them.
If you go over to the first page, Doctor, right-hand column.
As to the issue of consistency, it indicates, "The case-control studies to date are consistent. Given the small effect size

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it is not surprising that some are positive, i.e., show a consistent" -- "show a significant increase in risk and some are negative, i.e., show a nonconsistent increased risk."
MS. CURRY: You keep saying consistent, but the word is significant.
MS. GARBER: Significant.
BY MS. GARBER:
Q. Let me start again.
"The case-control studies to date are consistent. Given the small effect size it is not surprising that some are positive, i.e., show a significant increased risk and some are negative, i.e., show a nonsignificant increase in risk or no risk difference."
Did I read that correctly?
A. Yes.
Q. Do you disagree with that?
A. It's interesting. He says the case-control studies are consistent, and then goes on to describe

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inconsistency. Some are positive and some are negative.
So you read it correctly. I think it's a contradictory statement. He's saying they are consistent, and then says some are positive, some are negative. That's not my definition of consistency.
Q. Doctor, this study author is -- in a peer-reviewed paper said that the data are consistent. Do you agree with that?
A. And then himself says some are positive and some are negative. And I'm asking, my definition of consistency means that they say the same thing.
Q. I didn't ask you for what -- why. I said did this study author in a peer-reviewed journal call the data consistent, yes or no?
A. Yes. Yes.
Q. Thank you. You didn't present that in your expert report that there are peer-reviewed published authors

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who say the data are consistent, did you?
MS. CURRY: Object to the form.
THE WITNESS: I would like to say that this is a -- this -- there's a difference between a paper and a news -- a story in a newspaper that a reporter wrote and an op Ed.
This is the medical version of an op Ed. I'm not going to be citing op Eds. I'm going to be citing the literature that's based on.
And -- and you find the difficulty with what Dr. Narod is saying here in his own statement. It's contradictory. He could -- it would have made more sense if he said I can explain away the inconsistency. Because the effect size is low you can expect to see inconsistent data. But you can't say it's consistent, some are

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positive, some are negative.
BY MS. GARBER:
Q. Doctor, let's -- let's turn to Table 1 of your expert report. And I'll mark that as Exhibit 9.
(Document marked for identification as Exhibit Holcomb-9.)
BY MS. GARBER:
Q. And this appears in your expert report, correct?
A. Correct.
Q. And it is separated by -- I -- I've produced a color copy, right?
A. Yes.
Q. Yeah. And it is -- there appears to be shaded studies that appear to be in a -- in a blue color; is that right?
A. Correct.
Q. And then those that are not shaded, right?
A. That's correct.
Q. And then you have shaded

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the -- some of the studies in blue and why are those studies shaded in blue?
A. They are shaded in blue, because they have 95 -- 95 percent confidence intervals that cross one. And that is not a statistically significant finding whether it's showing an increase or a decrease.
Q. Did you create this table?
A. Yes, I did.
Q. On your computer?
A. Yes.
Q. And you put all the data into this table and -- and color-coded it?
A. Yes.
Q. In your expert report at Page 10, you indicate that the -- with regard to the case-control studies, the risk estimates range between 1.2 and 1.6, suggesting a 20 to 60 percent increased risk; is that right?
A. Yes.
Q. And so, you believe that the

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case-control data are unreliable because they are inconsistent based on some studies lack statistical significance?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Is that your opinion?
A. I'm -- no. Please repeat that again.
Q. Sure.
Is it your opinion that the case-control data are unreliable because they are inconsistent based on some studies lack statistical significance?
A. No. It's my opinion that it's not reliable because those studies that lack statistical significance are actually showing no increased risk, no -- no -- we -- we use statistical significance to say that that increased risk was more than just by chance. So the lack of statistical significance is what leads to the inconsistency.
Q. Okay. So you believe that

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the case-control studies are inconsistent because some of the studies don't show statistical significance because the confidence interval crosses one; is that fair?
A. In the materials and methods, like you asked me to have a methods section, they will say before they look at the data, and this is what you do, so you're not biased, you say we're going to consider this significant at this level. We're going to consider this a positive study at this level, and then you go and you do your analysis. And when it doesn't reach that level, whether it's above or below, you don't come out of that study saying there's a -- there's a significant risk of ovarian cancer associated with talc.
So everything that's shaded in blue, those things are negative studies.
Q. Doctor, do you remember my question?

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A. I felt the need to clarify why I think this is inconsistent. It's not just -- it's because yes, they don't -- they -- they --
Q. Doctor, excuse me.
A. Yes.
Q. I'm going to interrupt you there, because --
MS. SHARKO: You can't do that.
BY MS. GARBER:
Q. I -- you -- you understood my question, yet you felt the need to clarify.
That isn't what I've asked you to do. I've asked you a very simple question: What's the nature of this Table 1, and then you launched into what the study authors do.
A. I -- I think I might be mistaken about the purpose of this --
MS. CURRY: Ms. Garber -- hold on. Can I just state an objection on the record, please?

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THE WITNESS: Okay.
MS. SHARKO: The question, if he can't answer it without clarifying, then he's entitled to clarify the question.
And the question was broader than what you just stated. It was, because it asked specifically whether or not the case-control studies are inconsistent because it doesn't show statistical significance.
BY MS. GARBER:
Q. Doctor, is it your opinion that the studies that do not show statistical significance are unreliable and attributable to chance?
A. Yes.
Q. And is it your opinion that the case-control studies that do not show -- strike that.
Is it your opinion that the studies do not -- that do not show statistical significance are unreliable

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because they're inconsistent with those that do show statistical significance?
MS. CURRY: Object to the form.
THE WITNESS: Because they are inconsistent with -- no.
BY MS. GARBER:
Q. Okay. Doctor, if we look at Table 1, with the exception of, I think, two studies, every one of those relative risks are all to the right of one, are they not?
A. Yes.
Q. And you have odds ratio, relative risk. Which is it for the case-control studies?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Which would be proper?
A. An odds ratio.
Q. Okay. And so --
A. I'm sorry. Hold on. I'm sorry. One second. I'm sorry. It's the

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other way around. Case-control would be relative risk.
Q. Are you sure?
A. Yeah.
Q. And all of those studies are to the right of one except two, right?
A. Right.
Q. And so all of those are positive because they're to the right of one, correct?
A. No, that's --
MS. CURRY: Object to the form.
THE WITNESS: That's a misunderstanding of statistics. They are not positive because they're to the right of one. It's defined in the study what they were going to consider a positive study. It had to be above one and have a 95 percent chance that the true risk estimate was within the range of the 95 percent confidence interval. So once it drops below

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one, you're saying the author themselves, by doing the statistics, by putting that in the materials and methods, they're saying I don't consider this a positive study unless I achieve a positive direction above one and the 95 percent confidence interval does not cross one, otherwise why bother doing that?
BY MS. GARBER:
Q. Can you give me any article, treatise, authority, that supports that claim that for a study to be positive, it needs to be greater than one and reach statistical significance?
A. Any treatise?
Q. Any -- any authority to support that claim?
A. Again, I think for each individual paper, I could go through the materials and methods, and the author who wrote that paper will describe, before they started collecting data, their

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methodology. And what they were going to consider significant.
Q. Do you understand that to be authority?
MS. CURRY: Object to the form.
THE WITNESS: I'm saying for each individual person that's doing the study, that is their definition of what they considered a positive study.
BY MS. GARBER:
Q. I understand that. I'm asking you for an authoritative paper that indicates your definition of a positive study meaning greater than one that reached statistical significance constitutes a positive study. Can you please give me an authority for that statement?
A. I'm sure if you gave me the time I could find it. But I don't have one that I can quote you now.
Q. You can't come up with one

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off the top of your head?
A. No. It's such -- you're asking something that is so widely accepted, that it would be like finding an authority that says water is H2O. I mean, it's -- I could find a nice review article that explains, and this all comes down to the quality of the study, and in the study design how much risk is there for a spurious value, for a confounder or for a recall bias to play a role.
And that's why you have -- I think of 95 confidence intervals as your bumpers, your safety bumpers that keep you from making a mistake.
Q. Is the point estimate the best estimate of risk?
MS. CURRY: Object to the form.
THE WITNESS: The point estimate has to be taken into account with the 95 percent confidence intervals.
BY MS. GARBER:

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Q. That wasn't my question. Is the point estimate the best estimate of risk?
MS. CURRY: Object to the form.
THE WITNESS: I don't understand your question. As opposed to what?
BY MS. GARBER:
Q. In looking at the data, in looking --
A. As opposed to what though? All you get is the point estimate and the 95 percent confidence interval. So you're saying it's better than what?
Q. You've never seen that statement that the point estimate is the best estimate of risk?
A. Have you heard the term "compared to what"?
Q. Okay. Doctor, what is your definition of a negative study?
A. A negative study is a study that doesn't reach your predefined

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definition of a positive study. Anything that doesn't reach your definition of a positive study -- there's no in between. It's either positive or negative.
Q. So your definition of negative is a study which can be to the right of one or greater than one, but doesn't reach statistical significance? That's how --
A. Say this once again.
Q. That's how you define a negative study?
MS. CURRY: Object to the form.
THE WITNESS: I do. And the reason being is because when you think about the problems with case-control studies, and it's every -- all the experts on both sides talk about this risk of recall bias. Recall bias never sends your numbers below zero.
BY MS. GARBER:
Q. Doctor, did I ask you about

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recall bias?
A. And I'm explaining why I have this opinion.
Q. I didn't ask you why you have your opinion.
A. Then I'll withdraw my statement.
Q. Your lawyer will be able to ask you questions. Thank you, Doctor.
Doctor, have you cited any authority to support your claims that studies that don't show statistical significance are attributable to chance and bias?
A. No. That's not -- that's not my claim, first of all.
Q. Okay. Doctor, do you know who Sander Greenland is?
A. No.
Q. Do you know who Kenneth Rothman is?
A. No.
(Document marked for identification as Exhibit

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Holcomb-10.)
BY MS. GARBER:
Q. I'm going to mark as Exhibit 10 a paper that was just published. Doctor, in just looking at this paper -- this paper was just published on March 21st, here at the bottom. March 21, 2019, in Nature.
Do you -- do you know that journal?
A. Yes.
Q. And what's your opinion of that journal?
A. Nature?
Q. Mm-hmm.
A. It's a highly respected journal.
Q. Thank you.
And do you see that the title of this article is "Retire Statistical Significance"?
A. Yes. And this is a comment in the highly respected journal. Again, this is an op Ed piece, not -- this is

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not a study.
Q. Doctor, do you see who the study authors are?
A. Yes.
Q. And do you see that Sander Greenland is one of the study authors?
A. Yes.
Q. And do you see that it goes on to say, "And more than 800 signatories call for an end to the hyped claim and dismissal of possibly crucial effects."
Do you see that? That's the --
A. Yes, I do see that.
Q. All right. And let's look at this paper, if we could, together.
It begins by stating, "When was the last time you heard a seminar speaker claim that there was no difference between two groups because the difference was statistically nonsignificant?"
Did I read that correctly?
A. You read that correctly.

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Q. So this is a paper, just from the introduction at least, looking like it's going to talk about statistical versus non-statistical data using the 95 percent confidence interval, right?
A. Right.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Is that fair?
And then if you go to the section which indicates the pervasive problem. It says, "Let's be clear about what must stop. We should never conclude that there is no difference or no association just because a P-value is larger than a threshold such as 2 point" -- "such as 0.05."
And then we turn to the next page, "or equivocally because a confidence interval includes zero."
MS. CURRY: Take the time to look it through.
BY MS. GARBER:

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Q. "Neither should we include that two studies conflict because one has a statistically significant result and the other did not. These errors waste research efforts and misinform policy decisions."
Did I read that correctly, Doctor?
A. Yes, you read that correctly.
Q. That's the opinion of these authors and 800 signatories, correct?
MS. CURRY: Object to the form.
THE WITNESS: I haven't read the full paper, but that's what the title says, yes.
BY MS. GARBER:
Q. All right. Let's go on to read further down where it indicates, "It is ludicrous to conclude that the statistically nonsignificant results showed no association when the interval estimate included serious risk increases.

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It is equally absurd to claim that these results were in contrast with earlier results showing an identical observed result, yet these common practices show how reliance on thresholds of statistical significance can" -- "can mislead us (See 'Beware false conclusions')."
Did I read that correctly?
A. You did.
Q. And -- and that's, in fact, what you've done in Table 1, haven't you?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. You've tried to separate them by statistically significant and nonstatistically significant, correct?
A. As -- as much -- I did divide them by significance and nonsignificance.
Based on these doctors -- I'm not familiar with them. But they are clearly worried about missing significant effects that are small, and I'm not

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saying I'm not interested in small effect sizes. But I'm saying that because of the risk of -- of confounders and other biases, that you need to find -- if you're going to have a small effect size, you're going to need to find consistency along -- the -- the onus is going to be even stronger to prove that you're not making a spurious conclusion. Because I would imagine, being Nature contributors, these are likely basic science researchers. And I can show you example after example in clinical medicine where nonsignificant findings led to wrong results. Whether -- and I give some examples in my report with, you know, what causes cervix cancer, the effect of estrogen replacement therapy. These things that we did not use the safety bumpers of 95 percent confidence intervals. It just -- it doesn't mean that the studies should stop. It just means -- and that you have a definitive answer. It means that that should raise

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questions for you and that should make you think that there may be something else going on.
MS. GARBER: Objection. Motion to strike as nonresponsive.
BY MS. GARBER:
Q. Doctor, what we're talking about here is ovarian cancer, correct?
A. Correct.
Q. We're talking about a risk of a deadly disease, correct?
A. I treat ovarian cancer, ma'am. We don't have to go through the fact it's deadly.
Q. Right. And -- and so here there is a body of literature over 40 years that's looked at the topic, right?
A. Right.
Q. And that body of literature has consistent odds ratios throughout case-control, cohort and -- and meta-analyses?
A. Cohort, no --

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MS. CURRY: Object to the form.
THE WITNESS: I disagree with that.
BY MS. GARBER:
Q. You do?
A. Yeah.
Q. Okay. The cohort studies are showing, aside from the Gonzalez study, they are all showing numbers that are to the right of one, aren't they?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. For every use?
A. For example, Gates is 1.06.
Q. Mm-hmm. That's to the right of one, isn't it?
A. Yes, ma'am. Just right to the right of one.
Q. Okay. Let's -- let's carry on with this paper.
MS. SHARKO: Why doesn't -- why doesn't Dr. Greenland disclose

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that he is a plaintiffs' expert here? I'm just curious.
MS. GARBER: Let's -- let's go on.
BY MS. GARBER:
Q. Doctor --
MS. O'DELL: Susan, that's totally inappropriate. Stop coaching the witness.
MS. SHARKO: I'm not. I'm not coaching him. I'm asking you.
MS. O'DELL: He's not my expert. I don't know what you're talking about.
MS. SHARKO: You identified him as an plaintiffs' expert.
MS. O'DELL: I did not.
MS. SHARKO: Yeah, you did. Look at your disclosures.
All right. We'll send -- we'll send you a letter on this, because I'm concerned about that.
MS. GARBER: So I -- I would just like to say I would

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appreciate it, Ms. Sharko, if you could stop coaching. I understand your need to, you know, speak up, but Ms. Curry is completely capable of defending the doctor. And your coaching only frustrates the process.
And -- and I will go to the Court if we need to, because it's not fair. And you know it.
MS. SHARKO: Right. There's no coaching. I asked you --
MS. GARBER: There is coaching, Ms. Sharko. You -- you have just coached him about Dr. Greenland, so --
MS. SHARKO: You are interrupting me. You are interrupting me.
MS. GARBER: Because, you know what, we're on the record. So we'll have this topic off the record later if we like.
MS. SHARKO: Are you going

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to interrupt me off the record?
There's no question pending. It's a question for the plaintiffs and we'll pursue it. We'll pursue it off the record.
BY MS. GARBER:
Q. Doctor, could you look at the bottom of this document. And it indicates: "Beware of false conclusions. Studies currently dubbed statistically significant and statistically nonsignificant need not be contradictory, and as such, designations might cause genuine effects to be dismissed."
Do you see that?
A. Yes.
Q. The study authors are very concerned about risk of disease being dismissed because a body of literature shows statistical significance and another one showing near statistical significance, but experts like you, dismissing that risk, they are concerned about that, aren't they?

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A. Because I'm -- I'm concerned --
MR. MIZGALA: Object to the form.
MS. CURRY: Object to the form.
THE WITNESS: What I'm concerned about is if you have a group of studies that are all the same design that are subject --
BY MS. GARBER:
Q. Doctor, I didn't ask you that. I asked you yes or no, is that the author's conclusions in your opinion?
MR. MIZGALA: Object to the form.
THE WITNESS: The author is not here speaking in front of the camera. I'm here because you asked me my opinions. And if you want me to just read their opinions, you don't need me here.
BY MS. GARBER:
Q. I don't want that. I --

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A. So I'm here to give you my opinions --
Q. I don't --
A. -- but you're not -- you're not really interested in my opinions --
Q. What I --
A. -- because every time I try to offer it to you, you cut me off and you want me to tell you, are you reading his opinions correctly.
Q. No, Doctor, I'm asking for yours.
A. I believe you can read it.
Q. Do you agree with that? That was my question. Do you agree with these study authors?
A. Can you repeat the statement?
Q. Okay. Do you agree with these -- strike that.
These study authors are concerned about dismissing genuine effects.
A. Do I agree that they're

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concerned?
Q. Yes.
MR. MIZGALA: Object to the form.
MS. CURRY: Object to the form.
THE WITNESS: They're obviously concerned. They wrote the paper.
BY MS. GARBER:
Q. Okay. That was my first question --
A. Right.
Q. -- you didn't answer. Now my second question is --
MS. SHARKO: Objection.
MS. GARBER: Strike my second question. Let's move on.
MS. SHARKO: Thank you.
MS. GARBER: You know what? I just -- I don't think I've ever had another lawyer treat me as disrespectfully as you, Ms. Sharko. I just can't believe

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it. Okay.
MS. SHARKO: I have great respect for you, Ms. Garber. It's not my intention to make you feel disrespected.
MS. GARBER: When you laugh and you make snide comments, it's hard to see that you have great respect for me.
MS. SHARKO: I haven't laughed or made snide comments, but let's move on.
BY MS. GARBER:
Q. Okay. If we move on to the middle of the column. The authors say, "We agree on the call for the entire concept of statistical significance to be abandoned. We are far from alone." And it goes onto describe, 250 people signed on in the first 24 hours and another 800 experts.
Do you see that?
A. Yes.
Q. And so it's not just these

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study authors. It's -- it's other experts in the field, right?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Do you understand that from reading this or do you need to read the whole paper?
MS. CURRY: Object to the form.
THE WITNESS: I agree that you read the segment correctly.
BY MS. GARBER:
Q. Okay. And then, Doctor, finally, under -- at the right-hand side under the heading "Quit Categorizing," the authors write, "The trouble is human and cognitive more than statistical. Bucketing results into statistical significance and statistical non-significance makes people think that the items assigned in the way" -- "in that way are categorically different."
Do you see that?

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A. I do.
Q. And you're drawing categorical differences in the data between statistically significant and non-statistically significant, correct?
MS. CURRY: Object to the form.
THE WITNESS: Will I be able to explain for my reasons doing so? Or are just going to see if I agree with everything that they say?
BY MS. GARBER:
Q. You know what? Your lawyer can ask you questions --
A. Okay.
Q. -- that you want asked of you --
A. Okay.
Q. -- Doctor. But this is my opportunity to ask you questions that I want to ask you.
A. Sure.
Q. And finally, turning over to

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the next page. The -- under the heading of "Wrong Interpretations," it reads, "An analysis of 791 articles across five journals found that around half mistakenly assume non-significance means no effect."
Did I read that correctly?
A. Yes.
Q. And so, finally, turning over to page -- to the right-hand column, the authors conclude, "But eradicating categorization will help to halt overconfident claims, unwarranted declarations of no difference, and absurd statements about replication failure when the results from the original and replication studies are highly compatible.
"The misuse of statistical significance has done much harm to the science community and those who rely on scientific evidence. P-values, intervals and other statistical measures all have their place, but it's time for

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statistical significance to go."
And I assume that you disagree with these 800-some authors?
MS. CURRY: Object to the form.
THE WITNESS: If you say P-value has its place, what is its place if not to determine significance? That's all a P-values is. So I would want to know from the authors, if P-values have their place and it's not in determining significance, what exactly is the place for a P-value? It's only used for one thing, determining significance.
BY MS. GARBER:
Q. What was my question, Doctor?
A. I'm sorry.
Q. What was my question?
A. I don't remember.
Q. Okay. My question was, I assume you disagree with those authors;

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is that correct?
A. Yes.
Q. So in accord with the study authors of the paper we just reviewed, the case-control data as presented in your Table 1 should not be deemed different or inconsistent based on the confidence interval under the authority of the paper we just reviewed, correct?
MS. CURRY: Object to the form.
THE WITNESS: Under my authority, I would say they should be considered different.
BY MS. GARBER:
Q. Under the authority of the paper that we just reviewed --
A. Oh, these doctors want to get rid of statistics altogether. So we wouldn't even -- yeah, they would say don't bother doing them.
Q. Where do you see that these doctors want to get rid of statistics?
A. Statistical significance,

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sorry. They want to get rid of statistical significance altogether.
Q. You read Health Canada?
A. Yes.
Q. Let's look at what Health Canada said about the consistency of the study data. Okay?
A. Are you going to provide something?
Q. I'm going to mark the Health Canada draft screening assessment dated December 2010 as Exhibit 11.
A. Thank you.
(Document marked for identification as Exhibit Holcomb-11.)
BY MS. GARBER:
Q. There, Doctor, the study authors indicated that, "The meta-analyses of the available human studies in the peer-reviewed literature indicate a consistent and statistically significant positive association between perineal exposure to talc and ovarian

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cancer."
Do you agree with that, that that's what the meta-analyses show?
A. Yes.
Q. You disagree?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. You think --
A. No. They're talking about the meta-analyses?
Q. Yes. Do you agree with that?
A. I believe they take a bunch of studies, put them together. Yes, that's true.
Q. So you believe that they are consistent?
A. The meta-analyses?
Q. Yes.
MS. CURRY: Object to the form.
THE WITNESS: The meta-analyses -- if -- if I -- I

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want to make sure it's okay for me to expound on this.
The meta-analyses combine both case-control and cohort studies and come to the conclusion that the case-control studies that they are including, find a difference, and usually typically described as moderate -- a -- a weak difference. And cohort studies which show no difference. And they combine them together.
The few that have kept them separate and look separately have shown no difference in the cohort studies they've put together and a difference in the case-control studies.
BY MS. GARBER:
Q. Doctor, the authors here in the Health Canada have concluded that the meta-analyses are consistent. Do you agree with that?
A. Yes. That's what they are

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concluding.
Q. Do you agree with the study authors?
MS. CURRY: Object to the form.
THE WITNESS: Again --
BY MS. GARBER:
Q. Do you think they're -- do you think they are consistent or inconsistent?
A. No. Meta-analyses are consistent.
Q. Thank you.
You reviewed the Taher paper?
A. The what?
Q. The Taher, T-A-H-E-R.
A. Taher --
Q. Yes.
A. -- yes. Mm-hmm.
MS. CURRY: Ms. Garber, whenever it's appropriate to take a lunch break?
MS. GARBER: Okay. Let me

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just get into this. I'm half into it.
I'll mark the Taher 2018 meta-analyses as Exhibit 12.
(Document marked for identification as Exhibit Holcomb-12.)
BY MS. GARBER:
Q. And turning -- as to the topic of consistency, turning over to Page 49, under the conclusion, it reads --
A. Page 49, I'm sorry.
Q. -- "Consistent with previous evaluations, the IARC in 2010 and subsequent evaluations by individual investigators, the present comprehensive evaluation of all currently available relevant data indicates that perineal exposure to talcum powder is a possible cause of ovarian cancer in humans."
First, did I read that correctly?
A. You did read it correctly.

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Q. And this indicates that the data are consistent --
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. -- correct?
A. It's consistent with IARC, yes.
Q. Does it limit it to IARC, that statement?
A. IARC is basically using the subsequent evaluations and so consistency would not be surprising when you're rechurning the same data over and over.
So when you say that the -- the individual investigators are consistent with IARC, but IARC uses individual investigators. When you have individual investigator's data then put together into a pooled analysis, you would expect consistency. When you -- when you do meta-analysis that then take those same individual studies and put all the patients together, you would expect

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consistency.
The consistency in that sense, you know, really doesn't surprise me. If you take a bunch of studies that have the same risk of bias -- and even if the level of bias is the same, for example, if you're doing a case-control study in Boston, I wouldn't expect women in Massachusetts to be more prone or less prone to recall bias than a group of women in California.
So I wouldn't be surprised to see, especially since they are so small, similar risk. And that's why I have a problem with the commenters in Nature to say you don't need these, these safe ways, because as long as they keep going in the same direction, we should be assuming it's real.
But what if all the studies have the same problem, and that problem takes your risk estimate in the same direction? And that's the problem I have with just getting away with intervals,

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then, in any case.
So yes, IARC reviewed the individual investigator's data and came to this conclusion, and they are coming to the same conclusion, largely looking at the same data.
Taher's meta-analysis is basically Berge's, it's basically Penninkilampi. There's no new data in there. It's rechurning the same data.
So to say that this is consistent with this and this is consistent with this, and you're all looking at the same studies, to do the same thing over and over and expect a different outcome is insanity.
Q. Are you done?
A. Yes.
Q. What was my question?
A. Did I agree with this?
Q. Okay. That wasn't my question.
The subsequent evaluations by individual investigators, are -- are

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those contained within IARC's or are those new studies?
A. Well, interesting, IARC came to the conclusion that it's a possible carcinogen --
Q. Doctor, what was my question?
A. I'm going to answer. And this time, you asked me a question, I'm going to give you an answer. And --
Q. Are you going to give me an answer that's --
A. I'm going to give you a very direct answer to the question you asked --
Q. That would be great.
A. -- and if you would give me a chance, you would have found out that it would have been that case.
So IARC 2010 looks at talc. They have one prospective trial included in that.
In the coming years, you asked, are there subsequent data that was

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added to it. Well, IARC comes to this conclusion, in the subsequent years there's three more prospective studies that are not included in IARC that come to the conclusion that there is no association.
And there are a number of pooled analysis, and -- and meta-analysis that keeps rechurning the same old data that's in IARC.
So there's a number of studies that have come out since IARC. I would say the balance of which have been stronger design studies that have shown no increased risk. And I'll be curious to see what IARC thinks the next time they sit down and pool all this together.
Q. Doctor, Endnote 3 and 5 and 69 do not cite to IARC. Are you aware of that?
A. 3, 5 and 69 in IARC?
Q. Yeah. I'll represent to you they're Berge, Penninkilampi and --
A. Right, so what are Berge and

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Penninkilampi, what are the studies in those?
Q. Those are just rechurning in your opinion. Those are just --
A. I'm saying --
Q. -- those studies are invaluable because they are just rechurning the prior meta-analyses.
Is that your opinion?
MS. CURRY: Object to the form.
THE WITNESS: I'm saying that there's very little difference between Taher's meta-analysis and Penninkilampi's meta-analysis, and Berge's meta-analysis.
The overlap in those studies is great. There's very -- that's not much difference between those. They have very similar number of studies. And so yes, it is a rechurning of the same data.
BY MS. GARBER:

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Q. That doesn't provide you with support that those data are robust?
A. If you --
MS. CURRY: Object to the form.
THE WITNESS: No. If you -- if you --
BY MS. GARBER:
Q. Different authors doing -- picking basically different studies --
A. Different studies? That's what I'm saying, they are not different studies.
Q. Okay.
A. They're talking the same studies.
Q. I'm talking about the body of meta-analyses.
A. I'm telling you that Penninkilampi, and Berge, and Taher, if you look at the overlap in the studies that they are putting together, if you look at my case-control list, and it may look like there's so many studies, but in

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fact, you'll see that Purdie and Green, same dataset. You'll see that Wu 2015 includes Wu 2009. You'll see that Cramer 2016 includes Cramer 2009.
So is it surprising that 2009 Cramer and 2015 Cramer looks the same when the -- half of 2016 is 2009?
Q. Shall we throw out --
A. It is rechurning --
Q. Shall we throw out the meta-analysis because they are rechurning?
A. I'm saying all -- no. I'm saying that meta --
MS. CURRY: Object to the form.
We have to do this in -- in question and answer or you're going to drive the court reporter crazy.
THE WITNESS: I apologize.
MS. CURRY: Let her get her full question out, give me a second if I need to make an

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objection, and then please let him finish his answer.
BY MS. GARBER:
Q. Doctor, should we throw out the meta-analyses because the subsequent meta-analyses are just rechurning of prior meta-analyses?
A. No, what I'm saying is don't say Penninkilampi, Berge, and the -- don't count three -- in the same way that in my list of case-control studies, you shouldn't consider Purdie and Green different studies. Even though I have a list there just to show that I was being comprehensive. It's the same dataset.
So my point is, if you're look -- if there's a lot of overlap, you shouldn't then look and say, well, this is consistent, because what Bradford Hill meant by consistency was different populations in different places at different times. That's not the spirit of taking the same patients from the same times in the same places and looking at

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them over and over again.
Q. There's not 100 percent overlap in any of the studies, is there?
A. Not 100 percent. But the majority of them. The majority of Berge is in Taher, and the majority of Penninkilampi is in Taher.
You do the math and tell me what percentage is not there. It's the same. It's -- the majority, it's the same studies.
Q. In the case-control studies is the majority -- are the majority of those studies overlap of the prior studies?
MS. CURRY: Object to the form.
THE WITNESS: I don't understand what you mean.
BY MS. GARBER:
Q. Well, you seem to take issue with -- that there's overlap? So let's --
A. There's some.

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Q. Let's talk about the case-control studies.
A. Sure.
Q. Do the body of case-control studies provide 100 percent overlap of data?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. And what's the percentage of overlap in your opinion?
MS. CURRY: Object to the form.
THE WITNESS: I just mentioned the studies on my list that were overlap.
BY MS. GARBER:
Q. Okay. And it's limited to those studies, correct?
A. And you have -- irrespective of what the doctors say about throwing away confidence intervals, which is not the majority of people in medicine, I

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will say that, yes, when you don't have overlap you get a 50/50. You get a 50/50 significance, 50/50 non-significance.
If you keep churning the same data over, you would be surprised to see it drop out of significance. And in fact, when you look at Berge, which is really the only meta-analysis I -- I wouldn't say it's the only meta-analysis that I respect.
But one of the rules of meta-analysis is that you have to do a test for heterogeneity before you just decide to throw these studies together and it's valid to do so.
And I look at Penninkilampi. And Penninkilampi says, well, I did a study for heterogeneity. And I looked at, make sure they use condoms and diaphragms and perineal dusting. And that's what he's looking for heterogeneity.
But the biggest form of heterogeneity, the one thing that they

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don't mention, is the first thing Berge did. What if you looked at the case-control studies and the cohort studies? Should these things even be mixed together.
And Berge says, they shouldn't. There's too much heterogeneity. But they go ahead and do it anyway.
Q. The Penninkilampi authors looked at the issue of heterogeneity and found --
A. Through case-control -- I'm sorry.
MS. CURRY: You have to let her finish her question.
THE WITNESS: I'm sorry.
BY MS. GARBER:
Q. The Penninkilampi authors looked at the issue of heterogeneity and concluded that there was not heterogeneity with regard to talc exposure, true?
MS. CURRY: Object to the

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form.
THE WITNESS: Looking at a very similar group of studies as Berge, and somehow Berge came up with heterogeneity and mentions the heterogeneity between study design, and Penninkilampi, if you look at what they looked at as far as heterogeneity, they never say that they saw a lack of heterogeneity between cohort studies and case-control studies.
And how could you not find heterogeneity when you have none of the cohort studies showing a significant impact?
BY MS. GARBER:
Q. Are you an advocate for the defense?
MS. CURRY: Object to the form.
THE WITNESS: I'm an advocate for the truth. But I'm the biggest advocate for my

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patients. But that's a whole other story.
BY MS. GARBER:
Q. You are an advocate for your patients?
A. I am.
Q. Do you advise them that it's safe to put asbestos on their genitals?
A. No, I don't.
MS. CURRY: Is it a good time -- good breaking point for you?
MS. GARBER: Sure.
THE VIDEOGRAPHER: Off the record, right? The time is 1:07 p.m. Off the record.
(Lunch break.)
THE VIDEOGRAPHER: We are back on the record. The time is 2:04 p.m.
BY MS. GARBER:
Q. Good afternoon, Doctor. Did you have a good lunch?
A. Yes, I did. Thank you.

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Q. Very well.
In the case-control studies that are here published in Table 1, do those studies involve study participants of different ethnicities?
A. Yes.
Q. And do those studies involve case-control studies that have occurred over decades, in other words from 1982 to recently?
A. Yes.
Q. Okay. And while some of them are in the United States, some are in foreign countries?
A. Majority in the United States.
Q. But some are in foreign countries?
A. A few.
Q. Yeah. And --
MR. MIZGALA: Could you raise your voice just a little bit?
MS. GARBER: Yeah.

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MR. MIZGALA: Thank you.
BY MS. GARBER:
Q. And with regard to the case-control cohorts and meta-analyses, the published literature with regard to talc and ovarian cancer contained different study designs, can we agree with that?
A. Yes.
Q. And even within the case-control studies, those involve different study designs generally?
MS. CURRY: Object to the form.
THE WITNESS: No. The case-control is a study design.
BY MS. GARBER:
Q. Okay. I'll just strike that.
All right. Is it your opinion that unless a given study is statistically significant and with an odds ratio greater or equal to 2.0, that the findings are attributable to random

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chance?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. That's not your opinion?
A. No.
Q. Who is Melissa Frey?
A. She is one of my partners at Cornell. She is a GYN oncologist.
Q. Do you respect her as a clinician?
MS. CURRY: Object to the form.
THE WITNESS: Yes, I do.
BY MS. GARBER:
Q. Do you respect her professional judgment?
A. Yes.
Q. You indicate in your expert report that use of hormone replacement therapy, or can we call that HRT?
A. It depends what you're talking about. If you're talking about a

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combination single -- I -- I assume we're going to specify what you're referring to.
Q. Okay. For purposes of your expert report with regard to risk factors and HRT, what are you referencing?
A. Most of the studies that show a significant increased risk is with estrogen replacement alone.
Q. Okay. And you believe that HRT is a risk factor for ovarian cancer, or do you limit that to estrogen alone?
A. I would limit it to estrogen alone.
Q. Okay. In caring for women who use HRT in connection with menopause, have you had the occasion to prescribe or care for a woman using HRT Prempro?
A. Yes.
Q. Did you ever prescribe it?
A. Yes, I have.
Q. Are you aware that the -- what the odds ratio or the risks are associated with that drug for cancer?

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MS. CURRY: Object to the form.
THE WITNESS: Which type of cancer are you referring to?
BY MS. GARBER:
Q. We'll start with breast cancer.
A. I don't know the odds ratio exactly, no.
Q. Doctor, if I represent to you that the odds ratio for Prempro and breast cancer is a 1.24, you don't have any reason to dispute that, do you?
MS. CURRY: Object to the form.
THE WITNESS: I -- I don't know the odds ratio.
BY MS. GARBER:
Q. Do you know, Doctor, or are you aware that Prempro carries a black box warning for a risk of breast cancer based on an odds ratio of 1.24?
A. For all patients?
Q. Yes.

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A. No, I wasn't aware of that.
Q. No -- for menopausal women. Are you aware of that?
A. No.
Q. Do you believe that the risk associated with talc and ovarian cancer is generally 1.3 to 1.4?
MS. CURRY: Object to the form.
THE WITNESS: I believe in my report I say it's between 1.2 and 1.6. So I'll stick with that.
BY MS. GARBER:
Q. Okay. And so that would be a 20 to 60 percent increased risk of ovarian cancer associated with talcum powder products, right?
A. In the studies that show a risk increase at all, yes.
Q. And you believe that that odds ratio or relative risk is low?
MS. CURRY: Object to the form.
THE WITNESS: Yes.

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BY MS. GARBER:
Q. And do you, therefore, feel that it does not meet sufficiency of a magnitude of a risk to be reliable under the Bradford Hill factors?
A. No --
MS. CURRY: Object to the form.
THE WITNESS: -- that's not my opinion.
BY MS. GARBER:
Q. Okay. Do you have any opinion as to the magnitude of the risk or strength of the association between the talc literature and ovarian cancer?
A. Please repeat the question.
Q. Sure. Do you have an opinion as to the strength of the association or magnitude of the risk as it pertains to the talc ovarian cancer literature?
MS. CURRY: Object to the form.
THE WITNESS: It's generally

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referred to -- it's generally referred to as modest. In some cases weak. And I would -- I would agree with that.
BY MS. GARBER:
Q. You are aware of peer-reviewed and published studies that hold the opposite opinion to yours, right, that -- that the magnitude of risk -- magnitude of the risk is sufficient to meet with the Bradford Hill criteria as to that issue?
A. I agree with the statement that -- I don't agree with the statement that I've seen literature that described the association as anything but modest even in the -- by the authors who hold a different opinion.
Q. Do you know what IARC says as to the magnitude of the risk in the 2010 monograph?
A. I'd have to review it again to say specifically.
Q. Do you know what the

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prevalence is in the United States for use of talcum powder products?
MS. CURRY: Object to the form.
THE WITNESS: The different studies that I reviewed had different -- different prevalence of use. And I think it's somewhat related to the ethnic group. For example, the group that has probably one of the lowest rates of ovarian cancer is African Americans, and historically they have one of the highest uses of talc.
But for example, in Gertig at the -- at that time of that study I believe it was about 42 percent of women reported using it with about 14 percent using it daily.
BY MS. GARBER:
Q. You've seen literature that cites it as high as 50 percent in the

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United States, right?
A. Yes.
Q. Do you agree with the Narod author in 2016 that it's right to be concerned over carcinogenicity of talc even if a risk ratio is below 50 percent?
MS. CURRY: Object to the form.
THE WITNESS: No. I think that statement taken in isolation, I would not agree with that.
BY MS. GARBER:
Q. You agree that his opinion has been published in Gynecologic Oncology, correct?
A. I agree, yes.
Q. Do you have an opinion as to when subgroup analysis for epithelial ovarian cancer histology type is performed in the studies that serous has the strongest association?
MS. CURRY: Object to the form.
THE WITNESS: I do. It's

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not surprising, because it's the most predominate cell type.
BY MS. GARBER:
Q. Do you agree if women tend to use talc daily, as you indicate in your report, that the use becomes habitual rather than memorable?
A. Habitual rather than memorable?
Q. Mm-hmm.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Do you understand the nature of my question?
A. No, I guess I have to think about that.
Q. Let me see if I can help. So if, let's say, I have grown up brushing my teeth every single day twice a day with Crest toothpaste, and somebody wants to know what I've done over my lifetime, I don't have to think about, oh, did I use Crest every single day,

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twice a day? It's habitual because I've done it my whole life, rather than if I used one product one day and another product the other day and, you know, it was not something that was part of my ADLs. You understand what ADLs are, of course.
A. I do.
Q. Yeah. Activities of daily living. So if it was not part of an activity of daily living, it might be more memorable.
Do you understand now?
MS. CURRY: Object to the form.
THE WITNESS: I -- honestly, I think my understanding of this isn't that certain things are memorable and certain things are habitual. It's that activities can be impacted by alterations in your recall of those things by a number of factors, which I outlined in my report, one

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including the desirability of the exposure.
But -- so I think all behaviors are subject to changes in recall based on the specifics.
BY MS. GARBER:
Q. Do you believe that the case-control studies are unreliable for assessment of risk for talcum powder exposure in ovarian cancer based on recall bias?
MS. CURRY: Object to the form.
THE WITNESS: I think all case-control studies have a risk of recall bias, not just limited to ovarian cancer studies.
BY MS. GARBER:
Q. I understand they're at risk for that. Is it your opinion that the case-control studies have had recall bias at play to explain that increase in risk?
A. I think that's one of the possible explanations, yes.

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Q. Possible, not probable?
MS. CURRY: Object to the form.
THE WITNESS: I would argue probable.
BY MS. GARBER:
Q. Okay. I got you to change it to a probable?
A. Yes.
Q. Are you aware of literature that says it's not likely at play to explain the increased odds ratios or relative risks?
A. I have read opinions about it, but literature, no.
Q. Okay. Are you aware of authors that have studied the topic of talcum powder products and risk of ovarian cancer who have concluded that recall bias is not at play?
MS. CURRY: Object to the form.
THE WITNESS: Please repeat the question again.

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BY MS. GARBER:
Q. Sure. Have you -- have you read peer-reviewed published studies where the authors were studying talcum powder products and the risk of ovarian cancer and have concluded that recall bias was not at play as increasing the risk for ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: No. In fact, the only time I remember a study really getting into this where they had proof was Schildkraut 2016, where there was a pretty significant increase and people remembering being exposed to talc after 2014 compared to before 2014.
And I can't think of any other explanation for that difference other than recall bias.
BY MS. GARBER:
Q. Well, we'll get to that

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paper. And I appreciate that. But you just used a term, "proof." What do you mean by that?
A. I don't know exactly what I said. Can you repeat my statement?
Q. You said, "I remember a study really getting into this where they had proof, was Schildkraut 2016, where there were pretty significant" --
A. Let me change the word from "proof" to "evidence."
Q. Okay. Let's look at some studies.
(Document marked for identification as Exhibit Holcomb-13.)
BY MS. GARBER:
Q. I'm going to mark as Exhibit 13 a paper by Mills, et al. This is one that you reviewed, right?
A. Yes.
MS. GARBER: Sorry. I didn't -- I didn't make enough copies for you guys. I apologize.

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Here's a screen. The doctor has a screen.
BY MS. GARBER:
Q. Doctor, at Page 464 of this paper, if you can turn to that, the last page of the study. And on the left-hand column, about halfway down the paragraph, it begins "recall."
Do you see where I am? If you look -- if you look here, Doctor. See?
A. Yeah.
Q. Okay. It reads, "Recall bias has also been implicated as a limitation in studies of talc and ovarian cancer. However, findings in a prospective" -- "in a prospective study, the Nurses' Health Study, in which exposure data were collected prior to diagnosis and hence free of recall bias were similar to the present finding for our talc use and serous invasive ovarian cancer.
"It has also been suggested

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that use of talc is habitual versus memorable and not likely to be subject to recall bias."
So, Doctor, my question is, this is a peer-reviewed study author who is suggesting that the studies are similar between case-control and a cohort and suggesting that recall bias is not at play because the use is habitual versus memorable.
Do you agree?
MS. CURRY: Object to the form.
THE WITNESS: No. Can I explain why?
BY MS. GARBER:
Q. I don't -- I don't mean agree with the author. Do you agree with my assessment of what the authors are saying?
MS. CURRY: Object to the form.
THE WITNESS: That's true what the authors are saying.

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BY MS. GARBER:
Q. Okay. And you disagree that recall bias is not at play because the use is habitual rather than memorable?
A. No.
Q. You don't agree with that?
A. If I can explain my reasoning, or should I leave this at yes or no?
Q. Just I don't need to know why.
A. You don't need to know why.
Q. No, I want to ask you a few more questions and then I'll circle back to that --
A. Sure.
Q. -- because there are a few other papers that I want to get to before we understand that.
Doctor, if you can go back to the Health Canada, which we marked as Exhibit 11. And if you could turn to Page 28. Under -- do you see where I am? Under the 6.4, third paragraph down.

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Do you see where I am? It says, "In studies?"
A. 28. Yes. Yes. Okay.
Q. It says, "In studies where the exposure is simple, e.g., never versus ever use, recall bias is unlikely to be an important source of bias." And then it cites to Narod 2016.
"The positive association is strongest for serous histologic type," and then it cites to Berge 2018 and Taher 2018. "Findings that the association may vary by histologic type detracts from the hypothesis of report bias as this type of bias would likely operate for all histologic types."
Did I read that correctly?
A. You did.
Q. And so what the authors there are saying is if recall bias was at play here, you would expect to see an increase in all of the histologic types, not just certain ones, correct?
MS. CURRY: Object to the

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form.
THE WITNESS: One, the first statement, "The recall bias is unlikely to be an important source of bias," is now referring to an opinion of Narod. Narod's 2016, I told you was that not -- that wasn't based on data. So there's an echo chamber thing.
And then the positive association is strongest for serous histologic type, if you have a higher prevalence of a type, you would expect recall bias to be more commonly seen with that, because when you have rarer, smaller numbers, you may not reach an association high enough to show the increased risk there.
So it's not surprising to me if there was going to be a consistent cell type that you saw this increased risk with, it would be with serous, because it is the

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predominate cell type.
BY MS. GARBER:
Q. You disagree with the study authors of Health Canada wherein they are stating at Page 28, that recall bias is not likely at play --
A. They are -- yeah, I'm sorry.
Q. -- not likely at play for the increased risk amongst the studies, correct?
A. I do because if they would cite a study where they can show it wasn't at play. See, I can cite a study where I believe it was at play when I cite Schildkraut.
When they cite a study that shows it's not at play, they cite an opinion piece by Narod. There's a difference.
Q. Well, and they also cite the Berge and Taher papers, don't they?
A. For a different period -- for a different point.
Q. Is there any metric,

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objective metric to measure recall bias in a given study? In other words, for those who don't typically read epidemiological literature, there -- there is not an objective measurement that can be --

A. I can think of one.

MS. CURRY: Object to the form.

THE WITNESS: If you have a situation where there is a -- an increase in familiarity with a topic that happens after a certain time point and you look at the association before and after this is widely known and show that there's a difference, I think that that's a fair metric -- it puts the onus to figure out, well, why all of a sudden after the time that it's a well-known entity, why do more people remember using it who have cancer compared to the controls.

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So if the controls have the same memory of using it before it's widely known as after it's widely known, but the cases, all of the sudden after it's widely known the cases remember using, this habitual practice, all of the sudden goes up, after it's widely known, I take that as a fair metric of recall bias.

And I've tried to explain in my mind what other thing could get played to explain that finding, and I can't.

So with all due respect to Dr. Narod's opinion, which is not citing a paper, I have seen data where I think -- I can't think of another plausible explanation for what's at play other than recall bias using the metric I just described.

BY MS. GARBER:

Q. Widely known is subjective,

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isn't it? I mean, how does a study author decide what is and what isn't likely known?

A. Well, if you -- I think it's a fair thing to ask. But if you have a date where there's a big lawsuit, per se -- per se. And I bet you if you counted how many commercials you see on a topic, a liability topic, I bet you can come up with a clear point where you can say before this time frame there was this amount of activity on TV, and after this time frame, it was that much. And -- and yeah, that was a crude estimate to do it with what date the -- the first cases are becoming very well known.

But I disagree with the point that you can't approximate recall bias. Because I -- I do think Schildkraut's study was a good example of it.

Q. The Schildkraut separated the -- what was known from what was not known based on a time frame of 2014,

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correct?

A. Right.

Q. And what was known, what was widely known in 2014 in your opinion?

MS. CURRY: Object to the form.

THE WITNESS: Well, I don't think it was as widely known before 2014 of large payments and lawsuits because of talc being associated with -- with ovarian cancer.

Because it's my assumption that most lay people don't know of the association because they've been reading Cramer studies, or Merritt or any of these other -- I'm -- I'm going to assume that the majority of people out there who are going to be on these studies and answering these questionnaires, how are they going to find out about talc. It's most likely going to come through the

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lay media.
The lay media pipes up more when there is product liability associated with it.
BY MS. GARBER:
Q. When --
A. And so --
Q. When was that first time that there was lay media coverage of a talc verdict or litigation?
A. I don't think it's -- I can't give you the exact date where it starts. I think you'd have to look, and split your studies up into an earlier period and a later period.
But, if people who don't have ovarian cancer have the same recollection of talc usage before and after a certain point, but cases have a very different memory of using it before and after, I think that that's a very, very powerful statement, and I would argue that you'd be challenged to come up with another reason why that would

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happen, other than recall bias.
Q. Are you aware of peer-reviewed study authors that state in their papers with regard to talcum powder product use and ovarian cancer, that say reporting bias is not at play with regard to the results?
MS. CURRY: Object to the form.
THE WITNESS: I'm not familiar with, and you -- you posited that there's no good metric. So I'm not sure, other than me describing examples where I believe it's at play and explaining why, I would be curious to hear the opinion of somebody like Narod who says I don't believe it's at play.
And if your only justification for the statement is that I believe it's habitual versus memorable, that is less persuasive than what I'm

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describing.
I believe it was at play in Schildkraut. And I don't believe there is anything special about Schildkraut's study design that would make it at play in that study and not another one.
BY MS. GARBER:
Q. Okay. Your opinion that there's recall bias at play in the case-control studies is based on Schildkraut's study?
MS. CURRY: Object to the form.
THE WITNESS: Not only.
BY MS. GARBER:
Q. What -- what other data do you have to support that claim?
A. A trend in the strength of association also increasing over time.
Q. Is that your opinion?
A. Yes.
Q. That there is a trend of increasing --

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A. To be fair the term "trend" --
Q. -- risk over time?
A. I'm sorry.
Q. Sorry.
A. The term "trend" is a -- is a statistical term. So I -- I can't say I've subjected this to a statistical test.
But in earlier versus later studies, you do see an increase.
Q. And, Doctor, if we look at your Table 1 and we look at the odds ratios -- or sorry, the relative risk, do --
A. Let me go back.
Q. -- does it show an increase over time?
A. Let me go back one second.
Q. It's Exhibit 9.
A. I'd have to take the time to look through all the odds ratios, but one of the reasons why I color-coded it was I can just look at that and -- and see that

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there's more blue which are nonsignificant studies --
Q. Well --
A. -- in the beginning --
Q. Well, Doctor --
A. -- and these -- these are in -- in chronological order.
Q. Let's just look at the -- at the white ones.
The odds ratios don't seem to be increasing over time appreciably, do they?
A. Not to my naked eye, no.
Q. Okay.
A. Just the frequency of positive studies.
Q. And we're going to get to the meta-analysis shortly. But the meta-analyses over time. How many meta-analyses are there, by the way?
A. There's probably about seven. Maybe more.
Q. And do you, off the top of your head, do you have a general sense of

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what those odds ratios are?
A. Yes. I believe they're in the same modest range as the studies that are going into them. 1.24, 1.28, 1.31, in that general region.
Q. Let's look at another paper, the Langseth paper. You reviewed that as part of your expert opinions, right?
A. Yes.
(Document marked for identification as Exhibit Holcomb-14.)
BY MS. GARBER:
Q. And if you turn to page -- well, it's 358. It's the front page, Doctor.
And if you look at -- if you look at the right-hand column about halfway down -- do you see where I am? Where it says, "Methodological factors"?
A. Yes, I do.
Q. And the paper reads, "Methodological factors such as recall bias should always be considered in

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case-control studies. It could have been a problem had there been widespread publicity about the possible association between use of body powder and cancer. The IARC" -- shortened that -- "working group considers that there has not been widespread public concern about the issue and, therefore, considers it unlikely that such a bias could explain the consistent findings."
Did I read that correctly?
A. You did. And you're talking about one type of recall bias. The authors go on to say that's not the only type of recall bias that we have to consider. And in fact just recall bias in cancer patients remembering exposures at a higher rate cannot be ruled out.
Q. Doctor, you can't say to a medical degree of probability that there is recall bias that explain the statistically significant increased risk in the case-control studies, can you?
MS. CURRY: Object to the

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form.
THE WITNESS: No.
BY MS. GARBER:
Q. In your expert report, do you address at all anywhere in the four corners of your report where study authors -- peer-reviewed study authors have indicated that recall bias is not likely at play to explain the increased risk? Do you address that issue at all?
A. No.
Q. And anywhere in the four corners of your report, do you address that study authors, peer-reviewed study authors, have indicated that the epidemiological data is consistent?
A. Do I present the data in my report showing a 50/50 split and then say that other people called it consistent? No, I didn't.
Q. Let's turn to the Schildkraut paper.
(Document marked for identification as Exhibit

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Holcomb-15.)
BY MS. GARBER:
Q. I'm going to mark it as 15. Doctor, in your expert report at Page 9, you indicate that, "Recall bias can lead to spurious results in case-control studies in a variety" --
A. I'm sorry. Which page were you reading from?
Q. Page 9. You indicate that, "Recall bias can lead to spurious results in case-control studies in a variety of" --
A. I'm sorry. I'm still trying to find out where we are. I don't think --
Q. I'm just --
A. One second.
Q. I'm just reading.
A. I know. I just want to read along, if it's okay.
Yes, I'm ready for you.
Q. I'll try it again. You indicate that, "Recall bias can lead to

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spurious results in case-control studies in a variety of clinical scenarios." And then you cite to the Schildkraut 2016 paper, correct?
A. Right.
Q. All right. And --
A. Hold on. Is that Schildkraut that I'm -- let me see. 33, yes.
Q. What you didn't cite to is that the -- is what the authors stated about the class action publicity. And so if I can have you turn to Page 1416 of the Schildkraut paper.
And so if you go to the right-hand column, in the first paragraph about halfway down with the sentence that begins "although."
Do you see where I am?
A. Yes.
Q. It says, "Although our findings" --
A. No. I'm sorry. Wrong although. They say "although" more than

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once.
MS. CURRY: Where are you?
MS. GARBER: Right here.
THE WITNESS: Yes, I found it.
BY MS. GARBER:
Q. "Although our findings suggest that the publicity of class action lawsuits may have resulted in increased reporting of body powder use, our data do not support that recall bias alone before 2014 versus" -- "before 2014 versus 2014 or later would account for the associations with body powder use and epithelial ovarian cancer."
Did I read that correctly?
A. Yes, you did.
Q. So you didn't cite that in your expert report, did you?
A. I -- maybe I'm misunderstanding what they are saying here. But they're saying maybe it's not just not that alone. They're saying that there could be other things that cause

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recall bias. And they're saying -- they're not discounting that that played a role. They're saying there could be other things, and they are pretty much saying the same thing that I read before where they said there's other causes of recall bias other than just information out in the media.
Possibly there were multiple things at play that caused recall bias. But that statement, they're not saying there was no recall bias in the study. They're just saying that it may be more than just -- than just the lawsuits.
Q. That's your interpretation of what they are saying?
A. Well, it says --
MS. CURRY: Object to the form.
THE WITNESS: -- it says, "The data do not support the recall bias alone before 2014 versus" -- "or later would account for the associations." They

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didn't say that it didn't. They're just saying possibly there's other things.
Yes, that's my interpretation.
BY MS. GARBER:
Q. You don't know what the other things are, do you?
A. They don't either. They're saying -- they're not discounting recall bias. They're just saying there may be multiple sources.
Q. There was no widespread publicity about talc and ovarian cancer in the lay media in 2014, was there?
MS. CURRY: Object to the form.
THE WITNESS: Then why did Schildkraut decide to make that analysis? They made that analysis specifically because of the lawsuits.
BY MS. GARBER:
Q. You're making that

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assumption, aren't you?
MS. CURRY: Object to the form.
THE WITNESS: No. They -- they say in the materials and methods, why they split at 2014.
BY MS. GARBER:
Q. Do you know --
A. They didn't just routinely pick that up.
Q. I understand that, Doctor.
A. Right.
Q. But authors can make mistakes, can't they?
A. I've been pointing out a lot of them.
Q. Okay. You didn't point out this one, did you?
A. Which mistake?
Q. Well, do you know if there was widespread publicity about lawsuits in 2014?
A. The authors consider that maybe publicity would make a difference.

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They then design an experiment to see if they could show a difference, and guess what? The findings show exactly that. That controls have the same level of memory of exposure but the cases all of the sudden jump up after 2014.
If you do an experiment because you have a hypothesis, and your experiment then proves the hypothesis, you should reasonably say, this is why I did it. I found what I found. I have evidence of recall bias. That's the whole point why they did this experiment.
Q. Did the Schildkraut authors find a statistically significant finding between genital powder use and epithelial ovarian cancer?
A. Yes. What I found interesting about --
Q. Doctor, I didn't --
A. I won't editorialize. I won't -- sorry.
Q. I appreciate that.
A. Sure.

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Q. At Page 8, Figure 1 of your expert report, if we can turn there.
Are you there?
A. I am.
Q. Here you have a diagram regarding the levels of evidence; is that right?
A. Yes.
Q. I'll publish it on the Elmo. This is your diagram for the levels of evidence, correct?
A. It's not my diagram.
Q. In fact, it's the levels of evidence for the Center For Evidence-Based Medicine, or the CEBMA, correct?
A. Management, yes.
Q. And what -- is that a medical site or is that a business site?
A. I'm not sure.
Q. Why did you pick that diagram?
A. I was looking -- I was looking for an example of the -- what I

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believe is a widely held hierarchy on the strengths of different study types based on their ability to be altered by inaccuracies. And this was the diagram that I found that I thought showed it the best.

Q. Did you just look to find a diagram where cohorts were above case-control studies, is that how you searched?

MS. CURRY: Object -- object to the form.

THE WITNESS: If you search under levels of evidence, you will never find -- well, I may not say never. Who knows.

I -- I don't think you will -- you have to search hard to find a -- a figure that has cohort studies above case-control studies.

BY MS. GARBER:

Q. Okay. So what you said is if you search under levels of evidence,

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you will never find -- I mean -- I mean I may not say never. Who knows. You have to search hard to find a figure that has cohorts above case-control studies.

Is that your testimony?

A. I'm sorry. It's below. Sorry. The other way around. Thank you.

Q. Thanks for that.

Did you attempt to find a medical website or an evidence-based medical website as to the levels of evidence?

MS. CURRY: Object to the form.

BY MS. GARBER:

Q. Or did you find this one and stop?

A. I -- I don't -- I don't think that whether -- statistics don't alter from one practice to the other. Weaknesses in a study design are built in and baked in. And so no, I didn't look for a specific medical website, because I thought it would look differently than

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this.

This is how I was -- this is how I was trained. I mean, this -- I'm looking for -- there are some things that I learned in reviewing for the -- for this deposition. And there are certain beliefs that I've long held because I was trained that way. I was forced -- well, not forced. I was happily taking a graduate level statistics course as part of my fellowship. And I was taught this then too. And that was part of a medical statistics course.

So this is just consistent with what I already knew.

Q. Where do meta-analyses fall on your pyramid?

A. You know, the reason why meta-analyses aren't on these is because meta-analysis is a somewhat controversial practice. They -- there are some strengths to meta-analysis. There are some ways that meta-analyses can help. But you have to really, really conduct

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them in a strict format and not break the rules. So you can have a meta-analysis that's well -- you know, very well controlled, and look for heterogeneity and did all the things that you have to do, that would be a strong study. But it's so fraught with the ability to make it a poor study. So it's hard to put it on here. Because there is no one meta-analysis that's going to be positive. It's going to be a good study.

Q. What -- what is your basis to say that -- that meta-analyses are controversial?

A. Let me go through. I -- I thought I had actually given a citation for it when I said -- because I believe I made that statement in here as well.

You know, I didn't cite to a -- to an exact paper.

Q. So that's the opinion of Dr. Holcomb --

A. No, I wish I had cited it, because I actually reviewed different

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study designs. Not just for this. And that is, if given the -- the time, I could find a citation that makes the same statement. It's not just my opinion.
Q. But there's not one in your report?
A. There's not one in my report, no.
Q. You can't think of one either, can you?
A. No, I would have to do a search.
Q. So when you had your statistics class, what was your text, do you remember?
MS. CURRY: Object to the form.
THE WITNESS: I don't.
BY MS. GARBER:
Q. And I asked you this before, if you knew who Kenneth Rothman was in the context of epidemiology. And you did not, correct?
A. That's correct.

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Q. So I'll represent to you that he is a professor of epidemiology, an author of textbooks and many published articles regarding epidemiology. Okay?
I'll also show you that he is the study author of this widely used text with regard to epidemiology. You see that Kenneth Rothman is the first author, Sander Greenland is the second. And that goes back to that paper on statistical significance. That's the author, right?
You are not familiar with those authors or this text; is that correct?
A. Or the fact that it's widely used, no.
Q. Okay. You've never read a book with regard to meta-analyses and the utility of them -- strike that.
Can you name a text with regard to meta-analyses and the utility of them?
MS. CURRY: Object to the

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form.
THE WITNESS: No. As I stated before, I would have to search and find you one.
BY MS. GARBER:
Q. Did you know that Kenneth Rothman is known for his work on teaching about epidemiologic research methodology?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Were you aware of that?
A. Given the fact that I -- I've already answered that I wasn't aware who he is, I don't see how I would know that.
Q. Do you ever rely on meta-analyses in your practice to make clinical decisions, do you ever look at epidemiological data and set your care attendant to the results or are they just worthwhile in your opinion?
MS. CURRY: Object to the form.

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THE WITNESS: No, no, they're worthwhile but they -- we don't -- I've never made any clinical decisions on care based on one study. It's -- it's -- meta-analysis will become part of the totality of what I'm looking at.
BY MS. GARBER:
Q. Meta-analysis is looking at a systematic review of a body of literature, correct?
A. Meta-analysis is taking subjects that were in different places and different times and mixing them up as if they were all in the same place at the same time under the same conditions, hence it's fraught with potential issues.
Q. There's utility to them, isn't there?
MS. CURRY: Object to the form.
THE WITNESS: If done correctly, yes.

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BY MS. GARBER:
Q. What are -- what is the utility of them?
A. For example, if you had -- this question of do you have enough numbers in your cohort studies to approximate an effect size that you see in your case-control studies, well, you might be able to do that in a meta-analysis. You might be able to put all these things together.
And Berge says when we put everything together, we felt we had 99 percent chance of finding the effect size in the case-control size when we put all the people together from the three cohort studies that Berge put together.
So that's an example where it might be helpful. If you think you can put together studies that are biased for example, and that if you mix them altogether the bias will be diluted, that's where it's not helpful.
Q. Do you have a source to cite

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that when you put cohort studies together, that the bias will affect the results of a meta-analysis?
MS. CURRY: Object to the form.
THE WITNESS: I didn't -- that wasn't my statement.
BY MS. GARBER:
Q. Do you have a source for that?
A. I didn't say that. So why would I have a source?
Q. Do you have a source for what you just said?
A. Please repeat it.
Q. You said, "If you think you can put together studies that are biased, for example, and that if you mix them together, although the bias will be diluted, that's where it's not helpful."
What is your source for that statement?
A. The source? That adding biased studies together doesn't dilute

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the bias? I don't can't think of a source. I know it's not -- I know even some of your experts don't -- don't refute that. Ellen Blair Smith says as much in her -- in her expert report. She agrees that that's the case.
Q. Does she say there's no utility to the meta-analyses because of bias?
A. I didn't -- I didn't say that. If you're asking me about the statement, I can tell you that I can find support of that statement by some of the plaintiff experts.
Q. Let's look at a paper by Ken Rothman.
(Document marked for identification as Exhibit Holcomb-16.)
BY MS. GARBER:
Q. I'm going to mark as Exhibit 16 a paper titled "Six Persistent Research Misconceptions" by Kenneth Rothman. You've not seen that paper

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before?
A. No.
Q. Doctor, if you look at the left-hand column, do you see here that's illuminated or highlighted?
Do you see where I am?
A. Yes, I do.
Q. It reads, "Scientific knowledge changes rapidly, but the concepts and methods of conduct of research change more slowly. To stimulate discussion of outmoded thinking regarding the conduct of research, I list six misconceptions about research that persist long after their flaws become apparent.
"These misconceptions are:
"Number one, the hierarchy" -- I'm sorry.
"Number one, there is a hierarchy of study designs. Randomized trials provide the greatest validity followed by cohort studies, with case-control studies being least

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reliable."
So Dr. Rothman is indicating that there is a misconception that there is a hierarchy which ranks cohort studies above case-control studies.
A. He's admitting --
Q. Do you see that?
A. Yes. He's admitting that this is the hierarchy.
Q. No. He's admitting that it is a misconception to say that cohort studies are above case-control studies.
A. He's admitting that this is a common thought, right? He's saying there's a hierarchy. The misconceptions are, there's a hierarchy. So he's saying there is this thought out there that there's a hierarchy, because it's clear that there is and it's a commonly taught thing.
So this one doctor is saying, similar to the doctors you brought up earlier, let's throw away convention. And I would have to read the

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whole paper to understand why. But I take this as -- the first statement to say that there is -- he doesn't say well recognized.
But I believe he took the time to write this paper to try to debunk some of these things, because they are out there and well accepted.
Q. Right. They're out there, and he is concerned about that, that clinicians like yourself are putting cohort above case-control. And he's trying to debunk that because he doesn't agree with that; is that fair?
MS. CURRY: Object to the form.
MR. MIZGALA: Object to the form.
THE WITNESS: Can I tell you that there's --
BY MS. GARBER:
Q. Doctor --
A. -- not as much difference in what --

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Q. Is that what he's saying?
MS. CURRY: Object to the form.
THE WITNESS: Yes, yes.
BY MS. GARBER:
Q. Okay. Thank you. That's the only question that I had.
He's also saying, number three, "If a term that denotes the product of two factors is a regression model" -- "is a regression model is not statistically significant, then there is no biologic interaction between those factors."
So again, he is attempting to debunk this notion of holding at disparate statistically significant from nonstatistically significant data, correct?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. That's a misconception?
THE WITNESS: I'm just

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curious. Are you here -- are you more interested in me agreeing that you're reading this correctly or my response to it? Because I'd love to jump in and tell you about what I think about these statements. But I feel like I'm not being given an opportunity. And I -- you know, I could have come down and read all the papers that you want to read and read them out loud for you.
But I'm assuming that you would like to know if I agree with it, why not if I disagree.
But I feel like you keep on asking me, is that -- did I read that correctly, and I said yes, you read very well. And you say do you agree with it? And I say no.
And then I go to try to explain, and you move on. And I'm trying to understand what's the

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purpose of that?
BY MS. GARBER:
Q. Are you done?
A. Yes, I am.
Q. Okay. You know that I am here to ask you questions, and you're here to answer questions. You also know that this is in the context of a cross-examination and your counsel has the opportunity to ask you questions too. You understand that, right?
A. I understand.
Q. Thanks.
All right. So Dr. Rothman in his peer-reviewed and published paper indicates that there is a misconception about the hierarchy, which places cohorts above case-control. And this is a misconception about statistical significance and calling nonstatistically results different from statistical significant results.
Can we agree with that?
MS. CURRY: Object to the

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form.
THE WITNESS: No.
BY MS. GARBER:
Q. You don't agree with that?
A. Because you started off the statement by saying this is peer-reviewed. This is a review article. I don't know if it's peer-reviewed.
Q. It's a published article?
A. It's not peer-reviewed necessarily.
Q. But it's a published?
A. You said peer-reviewed.
Q. I know.
A. I'm saying, do you know that it was peer reviewed?
Q. Now I'm saying, it's a published article, right?
A. Simple -- yeah, you can -- it's an open access journal that you can -- I mean, just because something is published, you're making it seem like -- there's something called vanity publishing. And I'm not suggesting

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that's what he's doing. I don't know the author.
But to suggest that something's published and ergo it's worthwhile, that's a big misconception.
Q. All right. And otherwise you agree with what I just said, if we -- if we amend my question to say it is a published article --
A. Can you repeat it because I got so stuck on your mentioning that it was peer-reviewed that I didn't --
Q. I'll just move on.
A. -- I stopped listening.
Q. Did you attempt to look at what your institution said about study hierarchies?
MS. CURRY: Object to the form.
THE WITNESS: My institution? Which institution?
BY MS. GARBER:
Q. Where do you work? Where do you work?

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A. I work in two -- I'm actually an employee of Weill Cornell Medical Center. But I --
Q. Okay. And that's your institution, right?
A. As is New York Presbyterian Hospital, which is separate, so which institution --
Q. You have privileges at both?
A. I don't have privileges in the medical school because that's not our medical school's work. So, no, I don't have privileges --
Q. You don't have privileges in -- in the hospital associated --
A. The hospital is -- is owned by New York Presbyterian Hospital.
Q. Okay.
A. So I have no privileges at Weill Cornell.
Q. Got it. I didn't understand the -- the nature of that.
So did you look at Weill Cornell's study hierarchy?

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MS. CURRY: Object to the form.
THE WITNESS: I don't know if -- well, no, I don't know that Weill Cornell has a study hierarchy.
BY MS. GARBER:
Q. Okay.
(Document marked for identification as Exhibit Holcomb-17.)
BY MS. GARBER:
Q. Let's mark as Exhibit 17 a document.
And, Doctor, this is a printout of a website from Weill Cornell. And it is titled "Evidence-based Medicine, or EBM, Defined."
Did I read that correctly?
A. You did.
Q. Under the definition it reads, "Evidence-based medicine requires the integration of the best research evidence with our clinical expertise, and

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our patients' unique values and circumstances."
And then there's a citation to Straus, S-T-R-A-U-S, et al., Evidence-based Medicine 2015.
Did you see this before you put in your expert report the hierarchy that you put from the --
A. No.
Q. -- management website?
A. No.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Doctor, if we could look at this together.
Evidence-based medicine. That is what -- that's a -- that's a medical term, right, evidence-based medicine?
A. Yes.
Q. And it implies what to you?
A. It implies practicing on what's deemed to be accurate findings

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from studies, and then brought into clinical practice.
Q. Okay. And under that heading in the hierarchy at the top lists Cochrane systematic reviews. Do you know what those are?
A. Yes.
Q. Have you ever considered them for purposes of your practice?
A. Yes.
Q. You ever considered them for purposes of your opinions?
A. They are part of it --
MS. CURRY: Object to the form.
THE WITNESS: -- yes.
BY MS. GARBER:
Q. And next on the top of the hierarchy is what?
A. I'm not sure what SR is -- systematic reviews, must be, and meta-analyses.
Q. Mm-hmm. So up above the cohorts and the case-control are

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systematic reviews and meta-analyses, right, on this evidence-based hierarchy, right?
A. Yes.
Q. All right. And then there's evidence guidelines and the evidence summaries. And then one, two, three, four -- fifth down, lists randomized clinical trials, case cohorts, and control studies. All in the same line, correct?
A. Yes.
Q. And so that's a little different than your hierarchy, right?
A. Yes.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. And this one relates to medicine, not to management and business, right?
MS. CURRY: Object to the form.
THE WITNESS: Yes. It

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relates to medicine.
BY MS. GARBER:
Q. And this is from the web -- this is from the -- off the website of where you practice medicine?
A. Yes.
Q. And where you teach?
A. And where I teach. And I don't necessarily disagree that a well-designed --
Q. Doctor, I didn't ask you if you disagreed or not --
A. Okay.
Q. -- I just asked you --
A. Just to read the website.
MS. CURRY: Let him finish his response, please.
BY MS. GARBER:
Q. Are you aware that the link between smoking and lung cancer was initially discovered in the case-control studies carried out in the 1950s, are you aware of that?
A. Yes.

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Q. As a physician you do consider meta-analyses in your practice?
A. Yes.
Q. And as to the cohort studies in this case, do you rely primarily on them in support of your opinions?
MS. CURRY: Object to the form.
THE WITNESS: No. As I stated in the beginning, it's the totality of their reviews.
So the cohort studies which, you know, I will still say as a design are less prone to bias than case-control studies regardless of how this is, I don't think any -- anybody questions that.
I will look at the whole picture which is what I did with the talc literature. So it was the inconsistency in case-control results. It was the low level of strength of association that I found plus the lack of findings in

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the cohort study. And then the weaknesses and biologic plausibility that led me to the opinion that I offered in the beginning.
BY MS. GARBER:
Q. Do you believe that the case-control studies are less reliable than the cohort studies?
A. I believe that all study designs can have weaknesses. And a poorly designed study can come in the form of any type.
You can have a poorly designed cohort study. You can have a poorly designed case-control study. You can have a poorly designed meta-analysis.
I'm sorry, I forgot your question now.
Q. That's okay.
And with regard to the cohort studies, Doctor, I don't see in your expert report where you talk about the design limitations, specifically what

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even the authors talk about as the design limitations.
You don't -- you don't talk about those in your expert report, right?
A. I'd have to read through it. I'm not sure.
Q. Okay.
A. I'm not sure if I address that.
Q. I'll represent to you that I couldn't find a single word about you talking about the design limitations. So you can check me to see if I'm wrong.
You do talk about some of the design limitations and the problems with the case-control studies, correct?
A. That is true.
Q. And you do talk about some of the design limitations and problems of the meta-analyses, right?
A. Yes.
Q. And so in your opinion the case-control studies do not support statistically an increased risk of talcum

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powder product exposure and risk of ovarian cancer, right?
A. My feeling is that the case-control studies are not consistent in their results. That some studies show an association and some studies don't. And that it seems to be as consistent as flipping a coin.
Q. Do they support the opinion that there is an increased risk, yes or no?
A. Some do, and some don't.
Q. Okay. What about the -- the cohort studies, do they support an increased risk for --
A. No.
Q. Let me finish my sentence.
A. Sorry.
Q. Do the cohort studies support an increased risk for talcum powder exposure and ovarian cancer?
A. The initial Gertig study had found that in a subset of just histologically split out there was an

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increased risk of serous carcinoma. The reason why we're saying no about cohort studies is because the same group of women, when followed longer in Gates, that significance dropped down.
So I would say overall in those populations, the sister study, the WHI, and the Nurses' Health Study, that they did not support an increased risk.
Q. Do the meta-analyses as a whole support an increased risk of talcum powder exposure and ovarian cancer?
A. Not surprisingly, the meta-analyses all say that the case-control studies do and the cohort studies don't, and when you mix the 27 case-control studies with the three cohorts and weigh them fairly equally, that you will find an increased risk when you mix them altogether, which is not at all surprising.
Q. Do the odds ratios that are reported for epithelial ovarian cancer and genital talc exposure support an

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increased risk in ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: In which study?
BY MS. GARBER:
Q. In the meta-analysis as a body?
A. Again, yes.
Q. Okay. The only group of studies that, in your opinion, don't support an increased risk, you don't have a single criticism of, yet the studies that do, you criticize; is that fair?
MS. CURRY: Object to the form.
THE WITNESS: If you -- that is true. I'm criticizing all the case-control studies as a design. But that means I'm criticizing the ones that didn't find an association just as much as I'm criticizing the ones that do.
I'm saying at the design,

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there are flaws in case-control studies. And so I'm not just trying to pick on the positive case-control studies. I'm talking about case-control studies.
And that's -- from my look at the literature, I'm saying that about half of them saying there is an association and half of them saying that there's not, I'm criticizing case-control study design altogether.
BY MS. GARBER:
Q. You said generally that there can be design problems with cohorts, yet I don't see a single reference to the design limitations of the cohorts that play in this case, right?
A. Well, one of the concerns that you can have with a cohort study is whether or not you follow patients long enough, whether you have sufficient size.
And in my read, in my

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understanding of the data, I was not concerned -- size I already explained, that I was concerned since it was such a small level of effect in the case-control studies. It wasn't until I saw Berge, when they put them together, that I realized that you could overcome that size problem. And so I was not concerned that you would pick up an effect size that small.

Q. Do you remember what my question was?

A. Yes. You asked me did I bring up criticisms. And I'm saying my criticisms about cohort studies in general, I was able to put to rest with my reading of those cohort studies, whereas things like recall bias -- and we already went through Schildkraut -- I was able to find examples of why I was concerned, and then find examples of studies where I thought they were at play.

So, I'm just explaining to

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you, you're saying, why is there an absence of criticisms on these things. I didn't find any evidence of those things at play in the cohort studies.

Q. So you didn't find as the expert for Johnson & Johnson in the studies that didn't find an increased risk in your opinion, and you didn't bother to advise the court that there are design limitations in that group of studies, the cohorts, yet you did tell the court about the study limitations of the case-control and the study limitations of the meta-analyses, true?

MS. CURRY: Object to the form.

BY MS. GARBER:

Q. I didn't ask why. I just said true.

A. True.

Q. Thank you.

All right. Let's look at a couple of things. So in looking at the cohort studies and the limitations, is it

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true, Doctor, that none of the cohort studies were specifically designed to investigate the relationship of talcum powder product use and the risk of ovarian cancer?

MS. CURRY: Object to the form.

THE WITNESS: Specifically no.

BY MS. GARBER:

Q. Rather, the cohorts were designed to study a large number of outcomes in a wide variety of exposures, true?

A. True. When you do a cohort study, because of the time and money invested, you are very rarely going to design a cohort study to answer one question.

Q. Right. And that's a limitation, right?

MS. CURRY: Object to the form.

THE WITNESS: I'm not

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sure --

BY MS. GARBER:

Q. It's okay.

A. -- in what way that was a limitation.

Q. You're not sure?

A. No.

Q. Okay. With a cohort study looking at a rare cancer like ovarian cancer, the study has to be large enough to detect the true relative risk.

Do you agree with that?

A. I agree.

Q. So in fact, that a cohort does not find a significant relative risk can be due to the small study size, correct?

MS. CURRY: Object to the form.

THE WITNESS: Correct.

BY MS. GARBER:

Q. The sample sizes and the number of cases of most of the cohort study publications were too small to be

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able to accurately detect a relative risk around 1.2 to 1.3.

Do you agree with that statement?

MS. CURRY: Object to the form.

THE WITNESS: I'm not sure. I -- I've seen the opinion expressed in the Narod paper that you -- you had produced earlier. And I keep on referring to Berge only because it was the one meta-analysis where they actually addressed that.

Narod said you need like 200,000 women to see this effect size, and then you look at three studies with 78,000, 61,000, 41,000. You're getting close to that 200,000. They say, we have 99 percent power to detect the effect size in a meta-analysis that is held so highly to see the same effect size in the

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case-control studies.

BY MS. GARBER:

Q. Well, you do go to Berge all the time. But you do that by ignoring Penninkilampi which was a more recent study, right?

A. But the problem --

MS. CURRY: Object to the form.

THE WITNESS: The problem -- the problem with Penninkilampi is that Berge says the first thing out the box is I'm going to look at heterogeneity and see if these should be mixed. And one of the problems with putting meta-analyses on the top of your thing is assuming it's well designed.

And I think all these studies can have design flaws. But I think meta-analysis is probably the most at risk for making mistakes in the design of

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your study and then coming out with spurious values.

And one of the first things that is generally thought to be a no-no, we don't do cross-trial comparisons in general. If you had a group of women taking this chemotherapy over here and a group of women taking chemotherapy over there, we don't compare those two chemotherapies and say well, this study showed a response rate of this. This showed this, this, that.

So whenever you're going against that rule and you're going to mix these people together, you want to make sure that there's not heterogeneity. And the reason why I keep on going back to Berge, is because Penninkilampi somehow looked at pretty much the same studies and did not find a problem with heterogeneity, whereas Berge

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says yeah, I found this difference, but I'll caution you, don't take it too seriously because there was too much heterogeneity in these two study designs.

And I'm just questioning, how is it that Berge was able to find this heterogeneity issue and yet other -- Taher, Penninkilampi, other people who looked at largely overlap the same study group, with very little difference, somehow didn't come up with this problem.

BY MS. GARBER:

Q. So --

A. And so I keep on going back to it because it's the only meta-analysis that says okay, here is the group if we put them altogether. Maybe we shouldn't be doing it in the first place. But we're going to do it.

We put them altogether, but here is what it looks like if you leave

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them separately.
Q. So, Doctor, if you would then look at the Penninkilampi meta-analysis which is later than the Berge meta-analysis, right?
A. Yes.
Q. And the Berge meta-analysis, and you say that those are basically the same studies that the two study groups --
A. There's a lot of overlap.
Q. -- studied, right?
And the Penninkilampi says there's no heterogeneity. And the Berge that says there is. What is your basis to say Berge is right and Penninkilampi is wrong?
A. Because if you can share --
Q. You don't like the results of Penninkilampi?
A. -- if you can share -- yes. If you can share Penninkilampi, because Berge the -- Berge, Berge, I don't know if I'm pronouncing it correctly, sorry.
Q. However you say it.

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A. The first thing they do is to talk about heterogeneity in study design. And I'd like to see in Penninkilampi to say that they considered study design heterogeneity and found none. Because I don't remember seeing that. I'd like to see the paper if you have it. But I don't remember them even addressing it.
He goes into act -- other lesser important areas of heterogeneity like the percentage that looked at mode of exposure and things like that.
So if one doesn't even mention it, and one mentions it and says we found heterogeneity, I don't assume that the one who didn't even mention it, looked at it, found heterogeneity and just decided not to mention it. I'm assuming they didn't think about it.
Q. What did the Taher paper say about heterogeneity? Was there a significant overlap in the Taher paper?
A. I don't remember -- I don't

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remember them splitting out the case controls and the -- they -- they do say all the impact -- the positive effect was in case-control, not in cohort studies. Taher does say that.
Although Taher, if you look at the tables, there's a few things that I don't understand. Like they -- they say, actually in the cohort studies that there is some increased risk of -- of ovarian cancer.
And they -- they are actually including Gates in that. And they say there's possibly an increased risk in -- in Gates. And then go onto say, "but not mucinous."
But in Gates there was no increased risk of any of the types. In fact, the only one that came the closest to it was mucinous.
Q. We're going to get to that, and we'll go through that data, okay?
A. Sure.
Q. Let's look at Health Canada

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as to the topic of case-control -- or cohort studies.
A. Yes.
Q. Page 20.
All right. On Page 20 in this paragraph here. Do you see where I am in the -- in the Taher paper?
A. Yes, I see it.
Q. Or, sorry, Health Canada.
It indicates -- I'll -- I'll start with the first given.
"Given the long latency period of ovarian cancer, the follow-up periods may not have been sufficient to capture all cases for the individual cohort studies.
"Also, given the rarity of ovarian cancer, many of the available human studies may not be sufficiently powered to detect a low odds ratio."
Do you agree with both of those statements?
A. No.
Q. Which ones do you --

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A. I'll start off.
Q. Do you agree with either one?
A. I -- I'll start off. The long latency for ovarian cancer suggests we know the latency for ovarian cancer. To determine the latency for a cancer you have to know the time from exposure to a carcinogen to the time it develops.
So most people who make statements about ovarian cancer latency will look at things like women who developed ovarian cancer after the dropping of the atomic bomb at Hiroshima. They'll look at the chance of developing ovarian cancer after heavy occupational exposure to asbestos.
You have to know the carcinogen first before you can determine the latency. So they are assuming, well, if there is long latency in these situations it should be the same. But instead it's taken as a given.
Given the long latency of

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ovarian cancer. Latency to what? Latency from what incident? There -- latency from --
Q. Do you have an opinion of the years?
A. Excuse me?
Q. Do you have an opinion of the years of latency --
A. I -- I'm just letting --
Q. -- of ovarian cancer?
A. I'm saying that you --
MS. CURRY: Object to the form. And were you done with your prior answer?
THE WITNESS: No. Because I didn't go through the other part.
And then -- but going back to the other one where they say --
BY MS. GARBER:
Q. Sorry, Doctor, can I interrupt you?
Do you have an opinion --
A. I'd like to finish my first answer.

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MS. CURRY: I'm sorry. You -- you've asked three questions already that he's trying to respond to. So we'll still on question Number 1 as to why he disagrees with these two statements.
BY MS. GARBER:
Q. I just -- I just now asked you if you have an opinion as to the latency period.
A. I was -- yeah, I'm -- I'm trying to keep my train of thought steady. And I'm sure you want to keep yours steady as well.
So I'm going to finish answering the first thing you asked and then we'll get to that.
Q. Okay.
A. So sample sizes were not large enough to detect the 20 to 30 percent increased risk. And as you said, I keep going back to Berge, because they say yes, there was enough.

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If you add those three cohort studies, you had 99 percent chance of picking up what was in the case-control studies, but yet Taher says -- or, sorry, Health Canada says that there may not have been enough. But they -- and then they -- they quote Narod as opposed to quoting -- there's no mention of Berge saying that there was enough. There's just Narod's op Ed opinion in 2016 which was not based on a single study. So I didn't -- so I didn't agree with either one.
Q. So the Narod paper is talking in the abstract about the design of cohort studies, and that you need a sufficient number to detect a low odds ratio.
The Berge study is talking about their study, his study, right?
A. Berge was a meta-analysis.
Q. Yeah. And -- and they're talking about, for purposes of power, that study. Narod is talking about in

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general when you look at cohort studies, they have to have sufficient number of -- of study participants or you are not going to detect a small risk.

A. In the same way that I wouldn't look at --

MS. CURRY: Object to the form.

THE WITNESS: -- occupational exposure to asbestos to answer the question of what talc does when dusted on the perineum, I wouldn't stick on a hypothetical statement by Narod when you actually have data from women in the clinical scenario that you're questioning, do you or do you not have the power to detect the level of -- the low level of effect.

They are admitting it's a low level. They are saying that maybe it wasn't enough. But I'm saying there's a study out there

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that says it was enough and gives the explanation with the numbers.

It's not -- it's not cited here.

BY MS. GARBER:

Q. Doctor, you recognize that Health Canada is recognizing that the latency for development of ovarian cancer is an important issue in the cohort designs, right?

MS. CURRY: Object to the form.

THE WITNESS: I'm -- I'm not requesting that. I'm questioning what is the latency from. If you assume that talc causes ovarian cancer, what is the latency for talc causing ovarian cancer?

No one knows. So any extrapolation is an extrapolation from another situation like an atomic bomb, like in a heavy occupational exposure. So there is an assumption, and these

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assumptions get made over and over and over of what the latency period is. And you asked me then, do I have an opinion on what the latency period is.

And I can say that if you had heavy occupational exposure to -- I'll let you finish.

BY MS. GARBER:

Q. No. Carry on. Carry on.

A. No, I'll let you finish.

Q. I can do two things at once. I can multitask. I'm listening. I'm listening.

A. All right. So if you -- if you're asking me what is the latency period for someone making gas masks in a factory, I would say it's probably somewhere around 20 years, maybe 30 years. Hiroshima, you know, maybe 10 to 20 years. That's the question.

Q. So you have testified in a prior case that ovarian cancer has a long latency; is that true?

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MS. CURRY: Object to the form.

THE WITNESS: In those situations.

BY MS. GARBER:

Q. Yeah. All right.

And you have testified that it can be as long as 20 to 40 years, correct?

A. It's possible, yes. Based on the extrapolations I just mentioned.

Q. And you're aware of the Purdie study from 2003 that indicated the latency as likely 30 to 40 years, correct?

A. Can you show me Purdie study and I can see what they're relying on --

Q. Sure.

A. -- and see what citation they use, or if it's cited at all.

(Document marked for identification as Exhibit Holcomb-18.)

BY MS. GARBER:

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Q. Let's mark as Exhibit 18. The Purdie 2003 study.
Doctor, if you turn to Page 231. Following Footnote 23, it reads, "With regard to the latency" --
A. I'm sorry. 231. Following -- you said --
Q. Here. Look up here, Doctor.
A. Hold on one second.
Q. The authors state, "It is likely that ovarian cancer has a reasonable" --
A. I'm sorry. Can you -- I really want to read along with you. I just don't see where you are. You said 231 is the page we're on?
Q. Yes.
A. Okay. Left? Right?
Q. Left-hand column.
A. Okay. Top of the page, middle of the page, bottom?
Q. Right here. "It is likely that ovarian cancer has a reasonably long latency period between initiation and

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manifestation of established disease, and this is exacerbated by unusually late clinical detection of the disease."
A. And that --
Q. And you agree -- you disagree with that?
MS. CURRY: Object to the form. I think you said unusually. The word is usually.
BY MS. GARBER:
Q. Do you disagree with that statement?
A. What I -- I was curious to see what the citation was. I would say that in other situations with a known carcinogen, like the radiation from an atomic bomb or heavy occupational exposure, in those situations there is a long latency.
Q. And so, Doctor --
A. Here there's no citations. So I'm not sure what the statement is based on.
Q. So, Doctor, if you go down a

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bit it says -- couple lines, it says, "Thus, the latency period of more advanced malignant epithelial ovarian cancer could be estimated to be approximately 30 to 40 years."
A. "This time frame is consistent with data from the Hiroshima cohort."
Yes. They're doing what I said. They're extrapolating from an atomic bomb victim to figure out what the latency would be for somebody putting talcum powder in their underwear.
Q. And, Doctor, do you have any reason or basis -- strike that.
Do you have any basis to claim that the latency period would be any different for talcum powder exposure and development of ovarian cancer?
A. In the totality of my review of the literature, I don't see sufficient evidence to consider that talcum powder even causes ovarian cancer. So I don't have a carcinogen to start off with to

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start estimating latency.
What they're saying is, if you extrapolate from the few situations that we know that cause ovarian cancer, they have a long latency. So the assumption is, well, this must have a long latency period too.
They've given no citation why that it is likely. It's just, well, it happened here; it must be the same here.
Q. So let's talk about this. You're a study designer. And you really want to find out if talcum powder exposure causes ovarian cancer. And you know that there's all this data out here that ovarian cancer has a long latency.
A. It's all this data out here?
Q. Yeah. I'm giving you a hypothetical. There's data from radiation and other exposures. Okay?
A. Okay.
Q. And the latency period is about 20 to 40 years. Are you going to

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design a study that is going to follow women 10 or six or 15 years when you know that potentially it could be 20, 40 years? You're not going to detect all the risk, are you?

MS. CURRY: Object to the form.

THE WITNESS: I think there's a misconception between how long you follow a patient and latency.

Latency doesn't start when you designed a study and she signed the consent form. Latency started from exposure to development of a cancer.

So if somebody, let's say, on the woman's health initiative, is 55 at the time that she goes on, and you're trying to convince me earlier that this is this habitual thing that she does, that she doesn't even think about it. Cramer 2016 says she likely

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started in her 20s. She may be decades in by the time that you're following her.

So if somebody has been using talc for 20 years and then you follow them for another 12, or in the case of Gates, they were followed for 24 years, and they showed even women who had greater than 20 years' exposure didn't have an increased risk.

The other problem with this concept that you're having, like you're missing the latency, you would expect that even in the studies that are showing an effect, that you should be able to show a dose-response curve with duration of use. And it's an inconsistent thing. And all the data, it's inconsistent.

There's -- one of the struggles of saying that this is -- that talc is a cause of

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ovarian cancer is the biologic plausibility and where it falls apart on dose-response.

So I'm saying, just because you followed somebody from 12 years, doesn't mean that they started using talc the day before she signed consent.

And so no, if you're talking about a behavior that likely starts in the 20s, and you're trying to design a study that's enrolling women who started at 50, yeah, 12 years should be enough.

BY MS. GARBER:

Q. Doctor, in the studies themselves, do they indicate when the women started using the talc, the age at which they started using the talc?

MS. CURRY: Object to the form.

THE WITNESS: Again, no. I am referring to what Dr. Cramer believes.

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BY MS. GARBER:

Q. You're making assumptions based on one given study --

MS. CURRY: Objection.

BY MS. GARBER:

Q. -- as to when the women were exposed to talc. Isn't that true?

MS. CURRY: Object to the form.

THE WITNESS: Honest -- no. Honestly it's -- it's also personal experience with just people in my family who have used talc. It's been -- it hasn't been my experience. I -- I don't know anybody --

BY MS. GARBER:

Q. That's not scientific, Doctor, is it?

A. It's not. No. But you asked me what it's based on. I'm saying I don't know anybody who starts using talc and never did it before and they started at 50.

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Q. Okay. And if you were going to take my history if I were one of your patients and you wanted to find out about my risk for developing lung cancer, you wanted to find out about my smoking history, ask me what questions you would -- and tell me what questions you would ask me.
A. I would ask --
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. About my exposure?
A. I would ask when you started smoking cigarettes. How many cigarettes a day do you smoke.
Q. What else?
A. Have you been exposed to asbestos. I know that's a co-carcinogen. Things like that.
Q. So when I started.
A. Mm-hmm.
Q. And how --
A. Do you still smoke today?

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Q. -- how frequently I smoke?
A. Mm-hmm.
Q. And so that's a two-sided metric, right, frequency and duration.
A. Right.
Q. Right? And that's important to determine the true risk?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Right?
MS. CURRY: Object to the form.
THE WITNESS: That's true.
MS. GARBER: Okay. Let's take a break.
THE VIDEOGRAPHER: Okay. Stand by, please. The time is 3:28 p.m. Off the record.
(Short break.)
THE VIDEOGRAPHER: Okay. We are back on the record. The time is 3:55 p.m.
BY MS. GARBER:

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Q. Doctor, I'm going to mark the Gertig 2000 study --
(Document marked for identification as Exhibit Holcomb-19.)
BY MS. GARBER:
Q. -- as -- I'm sorry -- as Exhibit 19.
Doctor, a study limitation of the Nurses' Health Study is that the authors only captured talcum powder exposure one time in 1982 via questionnaire, right?
A. It's true.
Q. Another limitation is the study's exposure metric only captured frequency of use, and not cumulative use, correct?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. And Table 2 shows that the talc use in the perineum is never less

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than one week, one to -- one to six -- sorry.
Less than one time per week, one to six times per week, and daily, correct, is that your understanding?
A. Yes.
Q. And an adequate dose-response cannot be determined by just measuring frequency without the length of use, correct?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Do you agree with that?
A. No, I don't agree.
Q. Okay. Because the assessment was only made in 1982, many of the women may have stopped using talcum powder products over the study period. Do you agree with that?
A. Not likely.
Q. Do you agree that there were only 78,630 women who formed the cohort analysis?

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A. Yes.
Q. That's a far cry from the requisite 200 of the Narod study, correct?
MS. CURRY: Object to the form.
THE WITNESS: I've already addressed that in the past.
BY MS. GARBER:
Q. All right. You didn't -- and didn't you testify in the Ingham case that we don't know if there was a proper control group because we don't know if the control group was exposed to talcum powder products via diapering?
MS. CURRY: Object to the form.
THE WITNESS: You'd have to show me my --
BY MS. GARBER:
Q. You don't recall testifying about that?
A. We talked -- I'd be happy to read through it again. I don't have an

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independent memory of that.
Q. All right. The Gertig paper provided a result for ever use of talcum powder products on the perineum for ovarian cancer at Table 2. Do you recall that?
A. Yes.
Q. And I'll just show you Table 2 here. Table 2, ever perineal talc use, yes, no.
Correct?
A. Correct.
Q. All right. And the point estimate for ever use of talc, talc powder products and EOC was 1.9 with a confidence interval of 0.86 to 1.37; is that correct?
A. No. The reference is by Definition 1.
Q. The ever use.
A. I'm sorry.
Q. The ever use --
A. Yes.
Q. -- point estimate was 0.09

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under the multivariant relative risk, right?
A. Yes. Earlier you had said reference. So yes. It's 1.09.
Q. That's an elevated risk, right?
THE VIDEOGRAPHER: Can you give me one second. Sorry. Just lost power in my camera for some reason.
Stand by. The time is 3:59 p.m. Off the record.
(Brief pause.)
THE VIDEOGRAPHER: Okay. We are back on the record. The time is 4:00 p.m.
BY MS. GARBER:
Q. And, Doctor, before that break, I was just asking you about ever use of perineal talc -- ever perineal talc use. And I asked you, is a multivariant relative risk 1.09 with a confidence interval of 0.86 to 1.37. And you agreed that that's what it is,

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correct?
A. Yes.
Q. That's an elevated risk, correct?
MS. CURRY: Object to the form.
THE WITNESS: No. That's -- you can't say for sure whether that's an elevated risk. Because the true risk estimate is somewhere between having a 14 -- yeah, 14 percent reduction in risk to a 37 percent increase in risk. And the true risk is somewhere in there. Where exactly the true risk estimate I'm not sure.
BY MS. GARBER:
Q. The point estimate, the point estimate is elevated at 1.09, true?
MS. CURRY: Object to the form.
THE WITNESS: The point estimate is elevated, yes.
BY MS. GARBER:

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Q. And the follow-up study period was just 14 years, correct, here at Table 2, it sets forth a follow-up period.

If you look here at the table, you see the study period?

A. Okay --

Q. It's 14 years, right?

A. One second. I'm just doing the math. I went to public school.

Q. Okay. I went to a private school. But I'm not good at math either.

A. Yes, 14 years.

Q. Okay. And with regard to that follow-up period at Page 251, Doctor, the authors note the limitation in that they state, "In that regard, in the peer-reviewed paper" --

MS. CURRY: I'm sorry, where are you --

THE WITNESS: I'm sorry, I don't know where you're reading.

BY MS. GARBER:

Q. I'm reading at the top of

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251, right-hand column. The authors state, "Our relatively short follow-up period may be inadequate to detect an association if the latency for development of ovarian cancer is more than 15 years."

Did I read that correctly?

A. You read that correctly.

Q. So the authors are noting that study limitation, correct?

A. Yes, they did.

Q. Also, at 251, the authors in the middle column note that there are several important study limitations, correct?

A. That's what it says, yes.

Q. The authors also note that they cannot determine the age at which women began using talc or the duration of their use. That's what they say under the heading of "Several Important Limitations in Our Study," right?

A. Yes.

Q. Okay. None of those study

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limitations that I just went through with you are cited or addressed in your expert report; is that true?

A. That's true. I did not consider that a -- while a potential study limitation, I sort of -- I looked at the literature in totality, and other papers suggested that while they could not account for it, it's very likely that this was a practice that began early in the women's lives.

And so for completeness' sake, they are mentioning this as a limitation. But the follow-up period, as I mentioned earlier, of 14 years would be too short to pick up a latency of 15 years if the woman just started using talc the day she signed the consent. But if she had used talc for just three years before signing the consent, it would not have been a weakness.

So I respect them mentioning this for completeness' sake. But the likelihood of them having not enough time

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for latency -- because latency again is not follow-up time, it's exposure to diagnosis -- I think it's unlikely that they would not have the latency if you extrapolated from an atomic bomb victim.

Q. Did I ask you why those aren't -- those study limitations aren't contained within your expert report?

A. No. You asked me if it was mentioned. And I was just explaining why it wasn't.

Q. Try to just answer my questions, if you can, Doctor. I really appreciate it.

The relative risk for ever use of talcum powder products in serous invasive ovarian cancer was elevated at 1.4 with a confidence interval of 1.02 to 1.91, correct?

A. It depends on what type of use you're talking about. Because strangely enough, in this study, for some reason, if you use talcum powder on your perineum, but you also used it on

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sanitary napkins, an increased exposure, the point estimates are actually protective, there's .89, of course crossing one, and .90. So --

Q. Doctor, what was my question?

A. You said ever use of what type.

MS. CURRY: Did you complete your thought?

BY MS. GARBER:

Q. So, Doctor, you'll get a chance to answer questions that counsel for Johnson & Johnson may want to ask you.

My question was, is the odds ratio for serous ovarian cancer 1.4 with a confidence interval of 1.02 to 1.91? Is that what's reported in the study?

A. I'm sorry. One second, ma'am. For multivariate, it's 1.4, yes.

Q. Okay. And serous ovarian cancer, as you testified several hours ago, is a type of ovarian cancer,

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correct?

A. The most predominate type, yes.

Q. Okay. And so when you say in your expert report that none of the cohort studies showed an increased risk in ovarian cancer, that was an error, right? Because --

A. No.

Q. -- serous ovarian cancer is a form of ovarian cancer, true?

MS. CURRY: Object to the form.

THE WITNESS: No. I don't see that as an error, because if I have two studies of the same population, one with 14 years of follow-up, which you seem to take a lot of issue with, and one with 24 years follow-up, I was under impression with your criticisms of the study that the one with the longer follow-up would be considered more accurate.

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So if Gates has 24 years of follow-up, I would look at Gates as the answer to this.

So that's exactly what happened in this situation. These same group of women followed years later, closer to covering the latency that you were concerned about, this risk went away.

And so I don't think I would report twice on the same cohort of patients.

MS. GARBER: Objection. Motion to strike as nonresponsive.

BY MS. GARBER:

Q. Doctor, you didn't cite in the four corners of your expert report that the Gertig study showed an increased risk in serous ovarian cancer, did you?

MS. CURRY: Object to the form.

THE WITNESS: I just explained why I made the general statement --

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BY MS. GARBER:

Q. I didn't ask you why. My question was very clear and precise.

MS. SHARKO: You can't interrupt him.

BY MS. GARBER:

Q. Did you -- did you in the four corners of your report state what the results were for serous ovarian cancer in Gertig, yes or no?

A. Let me take a look and see. Yes, I did mention it.

Q. And, Doctor, do you state at the top of Page 11 that the Gates 2010 reversed the finding of the only cohort study reporting the association between genital talc and epithelial ovarian cancer?

A. Yes.

Q. What is your basis for that?

A. Pretty much as I stated in the report, that you said that I didn't state, is that there was a modest increased risk for invasive serous

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ovarian cancer in the Gertig study, which was stated on the bottom of Page 10 clearly. And that -- I can read it to you, "In 2010 Gates, et al." --

Q. You don't have to read it, Doctor. I can read it for myself. Let me withdraw that.

Doctor, did the Gates authors state that their study reversed the findings of the Gertig 2000 study?

MS. CURRY: Object to the form.

THE WITNESS: The results did, yes.

BY MS. GARBER:

Q. Did the study authors say our data reversed the findings, used that phrase, "reversed the findings" of the Gertig study?

A. I'd have to read through the study to see if it was mentioned.

Q. Is it epidemiologically sound to say, "My study reversed the findings of a prior study"?

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MS. CURRY: Object to the form.

BY MS. GARBER:

Q. Have you ever heard that done?

A. I use the term. So yes, I've heard it done.

Q. It's your turn -- it's your term?

MS. CURRY: Object to the form.

THE WITNESS: I use it in my report, yes.

BY MS. GARBER:

Q. Have you seen any other study authors who say, in all of epidemiological literature that you've looked at, that says that the Gates 2010 study reversed the findings of the Gertig 2000 study?

A. I could not tell you that out of all the epidemiologic studies that I've read whether or not that term was used.

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Q. In fact, there are epidemiological studies as recent as 2018, that use the Gertig study in their meta-analysis, right, the Penninkilampi for one?

A. That is true. And a weakness of the study.

Q. We're going to get to that. I'm sure that's your opinion. But that study relies on the Gertig study, in other words, if they are including it in their meta-analysis, surely those study authors aren't thinking that the results are reversed by Gates, correct?

A. And --

MS. CURRY: Object to the form.

THE WITNESS: -- and by not including Gates, they will come to a spurious result. They will think that maybe a prospective study supports that there's an increased risk. Where if they had done -- and this is what I was

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saying about meta-analysis.

Not only do you have to worry about heterogeneity. And we spent enough time talking about that. But selection of the studies that go into your meta-analysis are very, very important. And one -- and selection bias is -- is a very important thing that you have to watch out for as well.

So the fact that Penninkilampi, as late as that study just came out, was unable to figure out that that same cohort had been followed for ten years longer, we -- strengthening the study by increasing the follow-up time, all the criticisms you just gave me about Gertig is now strengthened in Gates, and yet you choose to use the number from Gertig. I'd have to ask why would somebody who's seeking the truth

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do that.
BY MS. GARBER:
Q. I'm going to show you some data and see if we can figure that out together.
You don't have any basis to conclude that the Penninkilampi authors didn't know about the Gates 2010 data, did you?
MS. CURRY: Object to the form.
THE WITNESS: I'm saying that I don't see in their definitions, including the studies that they included, the search terms that they included, a reason why they would negate Gates.
BY MS. GARBER:
Q. Do you know whether or not the Taher authors included the Gertig or the Gates study?
A. I believe they included both. But if I can look at it. Because earlier that was where I was telling you

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that they are saying Gates shows a possible increased risk of cancer in their table, where -- and I'm talking about on the -- the -- can I pull out Taher since you bring it up?
Q. That's okay. We're going to -- we're going to get there in a minute --
A. Okay.
Q. -- when I'm done with these cohorts, so...
All right. Let's -- let's talk about Gates 2010.
(Document marked for identification as Exhibit Holcomb-20.)
BY MS. GARBER:
Q. I'll mark as Exhibit 20, the Gates 2010 publication:
Doctor, the Gates 2010 article was a publication of the follow-up to the Nurses' Health Study I that was published as Gertig in the year 2000, correct?

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A. Correct.
Q. And the age of the women in the Gates 2010 were younger than the study women in the Gertig?
MS. CURRY: Objection to form.
BY MS. GARBER:
Q. Is that true?
A. I'm sorry, say the --
Q. Sorry. The age of the women in Gates 2010 were younger than the Gertig women, correct?
MS. CURRY: Object to form.
THE WITNESS: You mean the same women that were followed in -- in Gertig, by the time they saw them ten years later they were younger?
BY MS. GARBER:
Q. Is there a disparity in the age of the two cohorts?
A. Between Gertig and Gates.
MS. CURRY: Not -- I think --

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THE WITNESS: I'm a -- I'm a little confused by your question.
BY MS. GARBER:
Q. Okay. Do you understand that the women who were included in the Gates study were younger than the women in the Gertig study?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Maybe I'll show you --
A. Yes.
Q. -- and then you can maybe help me understand.
A. Because I don't need to read through.
Q. Doctor, if you could look right here?
A. Sure.
Q. On the first page. Do you see where it says, "The Nurses' Health Study was established in 1976 and the Nurses' Health Study II in 1989 amongst 121,700 U.S. women" -- "U.S. female

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registered nurses aged 30 to 55 and 116,430 U.S. female registered nurses aged 25 to 42 respectively."

So the two cohorts are different ages, are they not?

MS. CURRY: Object to the form.

THE WITNESS: I'm sorry, I'm just taking my time to read through this again.

BY MS. GARBER:

Q. Mm-hmm. Do you need time to study? We'll go off the record if you do.

A. No. That seems to be the case, yes.

Q. Okay. Okay. In the Gates study they were not asked questions about it -- about their talc use. Instead, the data about their talc exposure was carried over from the Gertig one-time 1982 questionnaire. Do you agree with that?

A. It's my understanding that

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the NHSII population was not queried on their use of talc because it was a one-time questionnaire in 1982.

So yes, the NHSII population is younger than the NHSI, but the question of the effect of talc on ovarian cancer was in -- only in patients that have been asked about ovarian cancer exposure.

Q. Mm-hmm. And that's a study limitation, correct?

A. No.

Q. Okay. In the Gates 2010 the authors provide no results for ever use of talcum powder product on the perineum for ovarian cancer; is that true?

A. No.

Q. It's not true?

A. No. Hold on one second. Sorry. I have to go and find.

Q. Doctor, if you turn to Table 4 --

A. Yes.

Q. -- Page 50. You see that

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the metric is talc use greater than once a week versus less than once a week. It's not ever never, correct?

A. Correct.

Q. That's a different metric from Gertig, right?

A. Different metric, yes.

Q. Thank you.

A. Valid -- valid change though.

Q. Okay. But different nonetheless, right?

A. Different and valid.

Q. While the Gates 2010 study followed women for ten more years, the follow-up is, in total, 26 years, correct?

A. Correct.

Q. And we don't know when the women were exposed, at what age they began using talc, correct, the study doesn't -- either study doesn't tell us that, correct?

A. No.

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Q. And assuming the latency for ovarian cancer is 30 to 40 years, that study period would be inadequate to accurately detect all of the women with ovarian cancer. Would you agree with that?

MS. CURRY: Object to the form.

THE WITNESS: No. I think if you -- if you can stretch to the assumption that the latency for something that's not even proven carcinogenic is the same as somebody working in a gas mask factory, I think you can equally -- in fact, it takes less of a stretch to believe that the women didn't start talc use four years before they went on the study, because that is not what most people believe, even Dr. Cramer doesn't believe most women start that late in life.

BY MS. GARBER:

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Q. But you have no data as to when the women in this study actually started talc use, do you?
A. No.
Q. The Gates relative risk for women who use talc greater than once a week and serous ovarian cancer is 1.06 with a confidence interval of 0.84 to 1.35. Do you agree with that?
A. Sorry, one second. Yes.
Q. And again, under your definition of positive, you do not think that is a positive finding, correct?
A. Positive and not statistically significant, yes.
Q. You do think it's positive, but not statistically significant?
MS. CURRY: Object to the form.
THE WITNESS: If you're asking me about directionality, it's obvious. Because directionality it's positive.
I do not consider it a

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significant or valid finding because I can't say for 90 percent, 95 percent accuracy, that the true risk estimate lies above one.
BY MS. GARBER:
Q. So, Doctor, earlier today you told me that where relative risk was greater than one, but not statistically significant, that was a negative finding.
Are you now changing your definition of positive versus negative?
A. I think you just misstated my statement, because that's not -- doesn't make sense what you just said.
Q. Okay. I thought you told me earlier today when I asked you what a negative study was, it included an odds ratio that could be greater than one but if it wasn't statistically significant, it was a negative study in your opinion?
A. In this term, the question that you just asked me when you were asked positive, I thought you were asking

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directionality. And that's why I said it's obviously directionality positive.
And if you're asking me is it a valid study, one that I would rely on with a degree of medical certainty, I would say no, because I'm one of those old school doctors who still believe that 95 percent confidence intervals are important.
Q. If the Court asked you if the Gertig serous ovarian cancer in the Gates study was positive or negative, how would you reply?
A. I would say it's a negative.
Q. Okay. And I think we already covered this. But you can't cite me to any authority, can you, that the Gates study reverses the Gertig finding, correct?
MS. CURRY: Object to the form.
THE WITNESS: Well, I'm here giving my testimony. So I'm going to assume the mantle of an

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authority. And I would say if this group is followed for ten years longer -- and I'll add the caveat that women who used it for less than one week had the same risk in a study just two years before this, as women who had never used.
So if you go to Gates 2008, you will see for this study cohort there's no reason to believe that it's not a valid thing to lump somebody who used it in less than one week with never used, based on the Gates 2008 data.
So, yes, I would say this 1.4 that was found in Gertig is not -- is no longer here.
And so in my estimation, this reverses the findings. This says in the same population of women followed longer, the increased risk went away.
BY MS. GARBER:

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Q. The study authors, again, do not say that, correct?
A. I'd have to --
Q. They don't say it reverses?
A. I don't remember. I'd have to read through the whole discussion section for you.
Q. Okay. And, Doctor, as to the Houghton study, the WHI study, you read that one, right?
A. Yes.
Q. You say in your report, at Page 11 in sort of the middle of the page, that there was no statistically significant association between use of genital talc and the development of ovarian cancer for ever users?
A. I'm sorry. The page again?
Q. Page 11.
A. Yes.
Q. And to make that statement, there is --
A. I'm still looking for it. One second.

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Q. It's in the middle of the page.
A. Can you repeat the statement that you said I'm looking for.
Q. In your expert report at Page 11 as to the Houghton study --
A. Yes.
Q. -- you indicate that there was no statistically significant association.
A. I'm looking for the term that you're saying.
Q. That's okay, Doctor.
Do you know what the sample size was in the WHI study?
A. I think it was about 61,000.
Q. And based on the relative small size, that's a study limitation of the Houghton study, correct?
MS. CURRY: Object to the form.
THE WITNESS: As taken in a vacuum as an individual study, yes.

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BY MS. GARBER:
Q. And what was the exposure metric in the Houghton study?
A. There was a question at baseline with, "Have you ever used powder on your private parts/genital areas?" And then respondents responding yes, were then asked to identify the duration of use. It was less than one year, one to four years, five to nine years, and all the way up to greater than 20 years.
Q. And, Doctor, that's -- that's a duration of use --
A. Right.
Q. -- assessment, right?
A. Yes.
Q. And that doesn't take into consideration frequency of use, right?
A. No.
Q. All right. And then the Houghton authors state that the Nurses' Health Study found that there was a 40 percent increase in the risk with a confidence interval of 1.02 to 1.91?

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A. I'm not sure where you're looking.
Q. Okay. Doctor, if you look at the right-hand -- yeah. If you look at the first page, the right-hand column.
MS. CURRY: Which study? Sorry.
MS. GARBER: Houghton.
THE WITNESS: Yeah, but we don't --
MS. CURRY: You haven't marked it as an exhibit.
MS. GARBER: Oh, I'm sorry, you guys.
(Document marked for identification as Exhibit Holcomb-21.)
BY MS. GARBER:
Q. Okay. Let's mark the Houghton 2014 study. Doctor, if you look at the right-hand column, here.
MS. SHARKO: What exhibit is this?
MS. GARBER: What?

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MS. CURRY: 21.
MS. SHARKO: Oh, 21? Okay.
BY MS. GARBER:
Q. Doctor, do you see where I'm marking right here, on the right-hand side?
A. Yes.
Q. The -- the sentence begins, "In the Nurses' Health Study (NHS) cohort, no overall association was found between the use of perineal powder and epithelial ovarian cancer" -- and it cites the risk -- "or serous ovarian cancer," and it cites the odds ratio. It goes on to say, "However, there was a 40 percent with a 95 percent confidence interval of 1.02 to 1.91 increased risk for serous invasive ovarian cancer with ever perineal use, which comprises 86 percent of the serous ovarian cancers in the cohort."
Did I read that correctly?
A. You read it correctly.
Q. And that cites to the Gertig

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study, right?
A. Yes. The beginning of that paragraph says, "To date there has only been one prospective study conducted." This is 2013. And we've already established there was a follow-up to that study in 2010 that wasn't included here.
Q. And that's precisely my point. So here, the Houghton authors are citing to the Gertig study, not the Gates study, correct?
A. That's correct. And I would consider it inappropriate not to mention that follow-up information.
Q. The authors don't say that the Gates 2010 reversed the findings of the Gertig study; rather, they cite those data, don't they?
A. They do.
MS. CURRY: Object to the form.
THE WITNESS: I just think it's a mistake to leave out what clearly -- this statement, "To

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date, there has only been one prospective study conducted the powder use and risk of ovarian cancer," and then only cite Gertig, which in fact to that date, there had been two studies.
If you don't want to say one reversed it. Then you have to at least admit that there was two studies. It was Gertig and Gates. So the fact that they made that mistake from the beginning of that paragraph and follow it through with only talking about Gertig, yes, you're accurate -- you read perfectly right what they said. But my point is that that's not an accurate statement. There was more than one.
BY MS. GARBER:
Q. So Nurses' Health Study was one study, right, with two publications?
A. No, I think that if you are talking about how many studies,

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there's -- there is two different publications. You're right, they are only citing one of them.
Q. So the Nurses' Health Study was one study with two publications or it was two studies with two publications?
MS. CURRY: Object to the form.
THE WITNESS: As you can see with my case-control lists for example, I still counted those as separate studies and you are talking about what percentage are positive, what percentage are negative. When, in fact, I had studies that were reported on the same populations at later time. I can -- I considered them two studies.
So I'm -- the Nurses' Health Study was one prospective study with -- with two publications. And the fact that they don't cite Gates, I see as a weakness to

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their -- their introduction.
BY MS. GARBER:
Q. You think they should have cited the Gates 2010 study?
A. I think that's -- I think that's -- it should make you pause when the only prospective study that you're quoting has this increased risk. And then the women followed longer, the risk goes away. It's worth mentioning I would think.
Q. Well, Doctor, the Gates study is peer reviewed and published, right?
A. Yes.
Q. And the Penninkilampi is peer reviewed and published, correct?
A. Yes.
Q. And I know the Taher isn't yet peer reviewed, but it -- it cites to the Gertig study too, doesn't it?
A. Repeated --
MS. CURRY: Object to the form.

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THE WITNESS: -- mistakes don't make it less of a mistake.
BY MS. GARBER:
Q. Okay. But -- but at least the Gertig and the Penninkilampi are peer reviewed and cite --
A. Some of -- so --
Q. -- to Gertig --
A. Yes.
Q. -- is that true?
A. Yes, yes.
Q. Okay. Let's talk further about the Houghton study --
A. Yes.
Q. -- the WHI study. The study enrolled 61,576 postmenopausal women, right?
A. I'm sorry --
Q. It's in the abstract under results?
A. Yes.
Q. Okay. And you don't -- do you know when the women started using talc, at what age, in this study?

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A. I have to go back to the materials and methods to see if they asked. One second.
No.
Q. Okay. And while there is duration of exposure, you don't know how many women were exposed to long-term talc defined by more than 20 years, do you, this study doesn't report that data, does it?
A. How many women had used it for 20 or more years?
Q. Yes.
A. I'd have to go to the results to check for that. Because it was part of the questions.
Q. All right. That's all right. I'll withdraw the question.
And turning to Page 4, Table 2. It shows the number of women in the study who reported using talcum powder products on their genitals, right?
A. Yes.
Q. And how many women used

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it -- let me catch up to you. How many women were reporting using ten years or more?
A. 68.
Q. Not very many, is it?
MS. CURRY: Object to the form.
THE WITNESS: No.
This -- you -- let me clarify. You're asking not how many women used it for longer, but how many women who developed ovarian cancer that had used it.
BY MS. GARBER:
Q. Yeah.
A. That's 68. Yes.
Q. Yeah. It's not very many women in that study group, is it?
MS. CURRY: Object to the form.
THE WITNESS: Relative to?
BY MS. GARBER:
Q. Relative to 200,000?
A. Narod didn't say you need

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200,000 women with ovarian cancer. He said you need 200,000 women total.
Q. Okay. Is 68 who developed ovarian cancer a good amount that gives you confidence in these data?
MS. CURRY: Object to the form.
THE WITNESS: You know, the smaller the number, the wider the confidence interval would be.
BY MS. GARBER:
Q. Is this a wide confidence interval? You testified in the Ingham case it was, didn't you?
A. That this is a wide interval?
Q. Mm-hmm.
A. Well, it crosses -- it's wide enough, and it's in the wrong -- you know, it crosses one, so it's not statistically significant.
So that apparent reduction in the risk, that 2 percent reduction in the risk, I wouldn't trust it.

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Q. That's a limitation of the study, right, the wide confidence interval, in that few women -- few number of women participants?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Right?
A. The few number of women participants, it's -- it's actually what, 61,000 women participants.
Q. The 68 women participants calls into question the validity of this subgroup analysis, doesn't it, Doctor?
MS. CURRY: Object to the form.
THE WITNESS: If you're -- the only analysis that was broken down, you're saying the number of women with ten or more years is 68.
And when you say that's low, I'm not sure it's relative to what.

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BY MS. GARBER:
Q. Okay. Another limitation of the study was that one-sided metric of only capturing duration. Do you agree with that?
MS. CURRY: Object to the form.
THE WITNESS: I think a perfect study would collect -- collect both. So yes.
BY MS. GARBER:
Q. It would be an optimal study to collect both, wouldn't it?
MS. CURRY: Object to the form.
THE WITNESS: Unfortunately there is no such thing as an optimal study. I could look at all -- every study I reviewed and pick up things that should have been done differently and better. And hopefully learn with the next study design. But that's true for everything in my reliance list.

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BY MS. GARBER:
Q. Let's see if we can work out how this would work.
If you only captured duration of use and you said it was -- you used it ten years or more, a given woman could have used it once a year on her anniversary for all you know, correct?
A. Correct.
The -- the big problem with this whole body of literature though, is this concept that you have any idea of the dose at the tissue level.
I -- if you told me you used it everyday, and I'm a woman and I use it everyday and you take three shakes and I take one, we're really not getting to the heart of dose-response.
And this -- this is a difficulty of all this topic. It's -- it's -- they are all limited. They are all limited. We have no idea of the dose of talc, if it's even getting to the

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ovaries, and if it's getting to the ovaries from that dusting, what amount is getting to the ovaries. And so we're playing a pseudoscience game with dose-response.

This isn't really dose-response. Dose-response studies have to do with the level of what you're interested in at the tissue level. So we can go through the stuff and talk about these as weaknesses, but this whole body of literature is weakened by the inability to know.

I don't even know for sure that it gets to the ovary from this way. How much each women put into her -- dusted with is -- is totally random.

Q. And that's what I want to really get at here because you're aware of data where there is talc found in the ovarian tissue, both tumor and non-diseased, right?

A. In women who report exposure and women who don't report exposure.

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Q. Okay. And you're aware of -- from your work in individual cases, that there are women who report talcum powder product exposure who have found asbestos and talc in their ovaries, correct?

MS. CURRY: Object to the form.

THE WITNESS: There are women who report neither of the two who find particles that diagnosed as talc or asbestos in their ovaries.

So you're getting to my point, is that the -- it falls apart with the biologic plausibility because of all these weaknesses, because you can't really assess dose at the tissue level, because women who report no -- because there isn't a good correlation between reported history of exposure and finding the particles.

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Because even in the cases of the particles that you find, I have no idea how they got there.

There is -- there is a lot of weakness just overall in this whole area.

So I would be less bothered by that if you gave me the epidemiology data that showed me a 20-fold increase. Then I'm less reliant or feel like you -- it's less necessary.

But in this situation where we've already gone through the epidemiologic data earlier. And I pointed out all the inconsistencies, as I describe. I call a 50/50 split inconsistent.

And now you get to this, and you can point out all the weaknesses. But I'm saying there's weaknesses in all these studies going through.

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BY MS. GARBER:

Q. Doctor, do you think that the data which shows that there is asbestos and talc in ovarian tissue provides a biologically plausible mechanism of carcinogenicity?

MS. CURRY: Object to the form.

THE WITNESS: Just the presence of it in the --

BY MS. GARBER:

Q. Yeah.

A. This is part of the problem with this whole area. The presence --

Q. Doctor, that wasn't my question.

A. No. The presence --

Q. Yes or no.

A. No. The presence of it does not --

Q. You don't think that --

A. Just the mere presence of the particle does not prove a causal relationship.

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Q. And you've seen paper after published paper wherein the study authors who are actually studying talcum powder exposure, talc product exposure and ovarian cancer, are stating that there is a biologically plausible mechanism, correct?

MS. CURRY: Object to the form.

THE WITNESS: The statements of --

BY MS. GARBER:

Q. You just disagree with them?

MS. CURRY: Object to the form.

THE WITNESS: But the -- in no situation, in medicine that I can think of would a -- the mere presence of a molecule or particle or whatever in a certain organ be evidence of its carcinogenicity.

That's not biologic plausibility.

Just its mere presence

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isn't.

And the fact -- the fact that so many people are saying that is exactly what I'm talking about when people overstate the findings of their studies, just the -- just the finding it there in no way implies biologic plausibility.

BY MS. GARBER:

Q. That's your opinion, right?

A. That's like saying --

Q. There are study authors who disagree with you, correct?

MS. CURRY: Object to the form.

THE WITNESS: Just to give you an example, it was -- it would be like saying because I went to the bank, there's a plausible evidence that I robbed the bank because I was there. I mean, that doesn't make any sense to me. That's not the way I look at it,

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not just in talc. I would look at that as a ridiculous situation in any statement.

We're here and studying this because people say they -- they describe finding talc there. But that's -- that's not the burden of proof.

BY MS. GARBER:

Q. Okay. Do you think the burden of proof is absolute proof that the talc got there through perineal dusting?

A. Does it matter how it got there if it's a carcinogen?

Q. If it's a carcinogen, does it matter?

A. It matters maybe for you, because of the nature of this litigation.

But if talc caused cancer of the ovary, I could care less how it got there. I'd want to -- you know, the fact that it's there is an issue. You'd be able to prove that it's a carcinogen.

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So even the cases, the Heller study, you mentioned it earlier, 24 women, 12 reporting a history of exposure, 12 not reporting a history of exposure. Not only is there not a correlation, if I go back and I read the paper, I think the fiber counts are even higher in the women without a reported history.

Q. We're going to look at that paper in a minute. But, Doctor, don't the authors suggest why that is, why the unexposed group may have high fiber counts?

MS. CURRY: Object to the form.

THE WITNESS: Do they what -- what it is? Can you repeat?

BY MS. GARBER:

Q. Don't the study authors suggest --

A. See --

Q. -- what may account for that

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high fiber burden in the non-exposed group?
MS. CURRY: Object to the form.
THE WITNESS: If you equal -- if you think and suggest and hypothesize are the same, I would agree with you. You see suggestion in science means there's some evidence to make you think this is the case.
Otherwise, you're just -- it's conjecture and it's hypothesis.
BY MS. GARBER:
Q. And you read the Cramer paper. Didn't the Cramer paper suggest that -- address the issues, the shortcomings of the Heller data, that there may be surface contamination that goes in and mixes with the talc or asbestos in the tissue which accounts for the unexposed group?
MS. CURRY: Object to the form.

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BY MS. GARBER:
Q. Don't they suggest that?
A. Yes. You're saying that one author says it's from one explanation and Cramer says it's from another explanation, so yeah, they're all suggesting these different things. One person saying it is diapering as a child. The next person is saying it's contamination. The truth is no one knows.
Q. Did Cramer say it's coming from contamination, or did Cramer say that you need to do polarized light to make sure that you're adequately counting what's really deeply embedded in the tissue and not what's coming in the surface?
MS. CURRY: Object to the form.
THE WITNESS: Because he thinks what's on the surface is contamination.
BY MS. GARBER:

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Q. No, from the paraffin processing, right?
MS. CURRY: Object to the form.
THE WITNESS: Contamination at some point. I mean, is it contamination during processing? Is it from surgical gloves from past surgeries? Is it from -- my point is, this is all conjecture because there's all these possible explanations. And people can suggest what they want in their introduction to their paper.
But I'm more interested in the actual science that goes to the heart of trying to figure out -- you know.
But again, you're -- we started this conversation by talking about the mere presence of talc particles in the ovary.
BY MS. GARBER:
Q. Okay. So we'll get back to

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the cohorts, and then we'll move onto the biologic plausibility.
But you would agree with me, wouldn't you, that there are study -- peer-reviewed study authors that set forth that there is a biologically plausible mechanism. You just disagree with that, correct?
MS. CURRY: Object to the form.
THE WITNESS: The reason that I have to disagree with it is --
BY MS. GARBER:
Q. Doctor, my question is yes or no.
A. I disagree with it that there's -- it's conjecture.
Q. That's fine. I understand your opinion.
I just want you to answer my question, which is you agree that there are study authors that say there's biologically plausible mechanism, you

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just disagree with that?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Correct?
A. I disagree with it. Many people disagree with it.
Q. Okay. And there's many people who agree with it, right?
MS. CURRY: Object to the form.
THE WITNESS: Based on pseudoscience.
BY MS. GARBER:
Q. Is the Health Canada pseudoscience?
A. No, I wouldn't describe Health Canada as pseudoscience in totality. But if you -- if you want to read through it and ask what things I agree with and what things I don't, I think I've already told you that when -- when authors make statements in their preambles, in their introductions, that

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aren't based on data but they state it as a fact, watch out for what's coming later.
Q. Okay. We'll go to --
A. If somebody starts off like that.
Q. We'll go to Health Canada and see what they said about biologic plausibility.
A. You spend a lot of time in Canada.
Q. You also reviewed the Gertig study, correct?
A. The same study that we were just going through?
Q. I'm sorry, I -- I misspoke. The Gonzalez study?
A. Yes, I did.
Q. And I'll mark that as Exhibit 22.
(Document marked for identification as Exhibit Holcomb-22.)
BY MS. GARBER:

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Q. Doctor, this study involved only 41,654 women, correct?
A. 41,000 women, and 600.
Q. Yeah. And the talc exposure metric was to ask women about the frequency of their talcum powder exposure within -- in their genitals within the prior 12 months, correct?
A. Let me just confirm that.
Q. It's under the methods on the abstract, Doctor.
A. Can you repeat your statement just now?
Q. Doctor, was one of the limitations that the -- the exposure was talcum powder exposure to the genitals within the prior 12 months. Do you agree with that?
A. Yes. Along -- along with frequency. I -- I thought you were -- yes.
Q. Okay. And the follow-up there in the abstract was 6.6 years, right?

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A. Yes.
Q. And you don't know when the women started using talc, right?
A. No.
Q. Like the others?
A. As I -- I would anticipate that they were average users.
Q. Doctor, does douching increase the risk for ovarian cancer?
A. This study suggests it does.
Q. Is douching a risk factor for ovarian cancer?
A. This study suggests it is.
Q. Do you tell your patients that douching is a risk factor for ovarian cancer?
A. No. Because it's only one study suggesting it.
Q. And, Doctor, any of the limitations that we've just gone through with regard to the cohort studies, none of them are listed within the four corners of your expert report; is that correct?

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MS. CURRY: Object to the form.
THE WITNESS: The limitations of cohort studies in general?
BY MS. GARBER:
Q. That we've gone through here, as we've gone through the cohorts.
A. The --
Q. You have not -- you have not put forth in the four corners of your report any of the study limitations of the cohorts, correct?
A. I'd have to read through the -- through this again. I -- I don't remember exactly, you know, every word that I said about them.
Q. Doctor, let's talk about the meta-analyses.
A. Sure.
(Document marked for identification as Exhibit Holcomb-23.)
BY MS. GARBER:

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Q. I'm going to mark the Penninkilampi paper. Exhibit 23.
Doctor, before we turn to the Penninkilampi paper. In your expert report, you indicate that the meta-analyses -- the results of the meta-analyses --
A. Can you tell me what page you are reading from?
Q. Page 13.
-- are discrepant. Do you recall using that phrase or that term?
It's the very last two words of the first paragraph at Page 13.
Do you see that?
A. Yes.
(Document marked for identification as Exhibit Holcomb-24.)
BY MS. GARBER:
Q. And I'm going to mark as Exhibit 24, a document which I will represent to you I created. It may have errors on it. I hope it doesn't.

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MS. CURRY: Do you have copies of that?
BY MS. GARBER:
Q. Doctor, what I've attempted to do is to show the results for talcum powder product and ovarian cancer results of the meta-analyses.
A. Mm-hmm.
Q. And I've listed there the meta-analyses and the pooled study. The -- as you see study type, the Berge study indicates it's a pooled study.
All of those odds ratios are within the vicinity of 1.22 to 1.35.
Do you see that?
A. Yes.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. And those are discrepant results?
A. I wasn't speaking about the strength of association. I think you assumed that.

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I was referring to, there's discrepancies between what tumors were increased and which ones weren't. For example, Penninkilampi, I believe, found serous and endometrioid but not mucinous or clear cell. Berge found serous only. Terry found -- I don't even think Terry broke it down by...
So there's discrepancies in results. I wasn't referring to the strength of association.
Q. Okay.
A. We spent a fair amount of time earlier talking about the levels of overlap in some of the meta-analyses.
Q. We're going to give you a chance to talk about those in a second, Doctor.
A. Sure.
Q. With regard to talcum powder products and serous ovarian cancer in the meta-analyses, the Taher paper, the Penninkilampi paper and the Berge paper are all within 1.24 to 1.38. Do you

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agree with that?
A. Can we talk -- we spoke earlier about the overlap in the number, the studies on these three studies --
Q. Doctor, I --
A. -- so it would be strange for the same study design to come out with discrepant results when they are looking at largely the same studies.
So yes, the -- the point that these are showing consistency is not going towards proving causality. Because you would just expect that if you subjected the same studies to this study design, you really should come up with very similar results.
Q. So you agree then, Doctor, that the meta-analyses both with epithelial ovarian cancer and serous ovarian cancer are consistent, correct?
MS. CURRY: Object to the form.
THE WITNESS: I believe they are very similar studies.

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BY MS. GARBER:
Q. Is the answer to my question yes?
A. Yes. I believe that when you examine the same studies you will get very similar answers.
Q. With regard to your criticisms of the Penninkilampi paper, did you write the journal voicing your concerns about this study?
A. No.
Q. Did you attempt to contact the study authors?
A. No.
Q. And you indicate in your expert report that the study authors in Penninkilampi should have included the Gates study instead of the Gertig 2000 study; is that correct?
A. Yes.
Q. And there are other study authors that we've seen that have included Gertig rather than Gates 2010, correct?

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A. It's a mistake then that's not only made by Penninkilampi.
Q. Right. The -- you have not performed a meta-analysis yourself, have you?
A. No, I have not.
Q. And you certainly do not have any evidence, do you, Dr. Holcomb, that would support your contention that if the study authors had used Gates 2010 instead of Gertig, it would have changed the outcome?
MS. CURRY: Object to the form.
THE WITNESS: I'm not so sure about that.
BY MS. GARBER:
Q. You would be speculating, wouldn't you, because you haven't done that study, right?
MS. CURRY: Object to the form.
THE WITNESS: But that wasn't your question. Can you

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repeat your question?
BY MS. GARBER:
Q. Sure. I'll ask it this way.
A. No, I wanted you to repeat, because I -- you're saying speculation, but I believe you asked me to speculate.
Q. Sure. I'll ask you a better question.
You have not performed a meta-analysis using the Gates rather than the Gertig for the ever use with epithelial ovarian cancer, true?
A. As I stated earlier I have not performed any meta-analysis, so that would be true for that specific question as well.
Q. And there are no study authors that have indicated it's a mistake to include Gertig rather than Gates 2010, correct?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. In other words, Health

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Canada didn't say that, did they?
A. Health Canada included Gates, so they didn't make the mistake.
Q. But they didn't say it was a mistake for other study authors to include --
A. The fact that they didn't make the same mistake, I've got to believe that they thought it was worthwhile to include the study. So yes, they thought it was a mistake not to include it. They included it.
Q. Well, they didn't say it was a mistake, did they?
A. Because they did it. Why would they --
Q. Doctor, you are speculating, aren't you?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. As -- as we talked about earlier --
MS. SHARKO: Was that a

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question the doctor should answer?
BY MS. GARBER:
Q. Did you answer my question?
A. I'm a little confused if you can repeat.
Q. I'll just withdraw and move on.
Doctor, the exposure for Gertig was ever/never, right?
A. Right.
Q. And the exposure for Gates was not ever/never, was it?
A. No.
Q. And so let's look at Penninkilampi, if we could. Page 46, figure A.
Do you see where I am?
Figure 2-A.
A. I'm sorry, 2-A? I'm looking at -- oh, I'm looking at Table 2. 46. Sorry.
Q. It's on Page 46.
A. Yes.
Q. And -- do you see where I

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am?
A. I'm looking at A, yes.
Q. Yeah, okay. Very good. And with the legend below, it indicates that 2-A is any perineal talc use, right? That's a ever/never metric, right?
A. That's what they say down here, yes.
Q. Right. And as we see, Gates is not an ever/never, is it?
A. Neither is Wu, et al., 2015 and they included that --
Q. I thought you might say that. Let's look at Wu. Or let's look at what Penninkilampi says about Wu.
A. Okay.
Q. Let's go to Page 43 of the Penninkilampi paper. And here in the middle of the paragraph.
Do you see where I am?
A. Yes.
Q. It says, "Note that the Wu, et al., 2015 include results from Wu 2009. However, only Wu, et al., 2009,

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reported on non-perineal talc use total lifetime applications and long-term talc use, hence data were extracted from Wu 2015 for any perineal use outcome from the Wu, et al., 2009, for the" -- "for the three other outcomes previously mentioned."
So the authors in Penninkilampi were trying to keep the data consistent and keep with ever/never exposure, not change the metric, right, Doctor?
A. Give me one -- give me one second just read that. Note that Wu, et al...
MS. CURRY: Object to the form. And do you have a copy of Wu 2015? Do you have a copy of the Wu 2015 paper?
MS. GARBER: I may. I don't know if I'm going to use it. You can if you'd like.
BY MS. GARBER:
Q. Doctor, should we go off the

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record while you read that?
A. Well, I guess I don't -- I'm trying to figure out, is he saying that he only looked at the patients in Wu 2015 that were actually included in the Wu 2009 for that --
Q. Doctor, if you don't understand what the authors are saying --
A. I don't.
Q. -- we'll just move on.
A. Yeah, I don't understand.
Q. Okay. All right. Let's move on.
A. Because it seems to me that he would only include Wu 2009.
Q. Doctor, I don't have a question pending.
A. If Wu 2009 only had the ever use, why have Wu 2015 cited if you only used the patients on 2009?
MS. GARBER: Objection to strike as nonresponsive.
BY MS. GARBER:
Q. Doctor, I did not have a

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question pending.
Are you aware, Doctor, that the Health Canada considered the collective meta-analyses in coming to their causal opinion regarding genital talc and risk of ovarian cancer?
A. Yes.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. And are you aware that the IARC 2010 considered the meta-analyses that were then available at the time in coming to their findings regarding talc and its carcinogenicity?
A. Yes.
Q. And what was Health Canada's conclusion about talc and risk of ovarian cancer? Did they come to a causal opinion?
MS. CURRY: Object to the form.
THE WITNESS: My memory was that they said it's possibly --

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they were similar to IARC, possibly a carcinogen.
BY MS. GARBER:
Q. Health Canada?
A. Yes.
Q. Okay. Let's look at Health Canada.
A. Sure. I have it open.
Q. Doctor, if you can turn to Page 21, and right above 6.2, exposure assessment, it indicates, "The most recent meta-analysis detailed above, Taher 2018, and consistent with the Hill criteria suggest a small but consistent statistically significant positive association between ovarian cancer and perineal talc exposure. Further available data are indicative of a causal effect."
Did I read that correctly?
A. Yes. Apparently they disagree with IARC.
Q. They looked at more data than IARC looked at, didn't they?

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A. I'll tell you, I'm not -- I have to tell you that they do say causal effect here. And yet if I have time to read through this, I can show you where they say it's a possible carcinogen.
And I'm not sure how you can say that something is a possible carcinogen and that it is causative of cancer in the same paper.
But if you can give -- if you give me the time I can show you where it says it's a possible carcinogen.
MS. GARBER: Let's take a break.
THE VIDEOGRAPHER: Okay. The time -- the time is 5:01 p.m. Off the record.
(Short break.)
THE VIDEOGRAPHER: We are back on the record. The time is 5:22 p.m.
BY MS. GARBER:
Q. Just so I'm clear, Doctor, it's your opinion that there is no

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biologically plausible mechanism by which talc powder products can translocate or migrate from the perineum to the fallopian tubes and ovaries in your opinion?

A. I want to make sure I'm understanding the question. I -- there is no expelling evidence that I've seen that has the ability to do it. So I'm not ask -- I'm not sure if you're asking is it just possible or is it -- is any evidence to suggest that it can happen.

Because if -- if you're saying is it possible, I'd have to say yes. If you're saying is there any evidence suggesting it could happen, I would have to say no.

Q. Doctor, is there a biologically plausible mechanism by which talcum powder products can translocate from the perineum to the fallopian tubes and ovaries in your opinion?

A. I would have to say it would be unlikely that -- that the female

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genital tract, while open, for obvious reasons has developed many mechanisms to keep particulate matter and foreign bodies from ascending into the peritoneal cavity.

So I would say it's -- it's not plausible to me.

Q. You've seen study data that would indicate that -- strike that.

You have seen study authors who have concluded the opposite, that there is a biologically plausible mechanism by which talc can -- talcum powder products can translocate from the perineum to the fallopian tubes and ovaries, right?

MS. CURRY: Object to the form.

THE WITNESS: I'm assuming you -- I'm assuming you struck your original question because they are making the statements with no data. And so no, I've never seen any data suggesting it

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can happen.

But people hypothesizing, yes, I've seen that.

BY MS. GARBER:

Q. You've seen study authors who conclude that, right?

A. I have seen study authors who hypothesize it. You can't conclude it without any studies showing it.

(Document marked for identification as Exhibit Holcomb-25.)

BY MS. GARBER:

Q. I'm going to mark as Exhibit 25 a document which I'll represent to you is an FDA letter dated April 1st, 2014.

And, Doctor, this document appears on your reference list, doesn't it?

A. Yes.

Q. And if we could turn to Page 5 in the middle of the page where the --

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A. I'm sorry, give me one second. 5 -- Page 4 -- 5. Mm-hmm.

Q. Where -- in the middle of the document where the first word is while.

Do you see where I am?

A. No. I'm sorry. Can -- can we use the --

Q. Right here in the middle, where it says while.

A. Give me one second, ma'am. Give me one second. Yes.

Q. "While there exists no direct proof of talc and ovarian carcinogenesis, the potential for particulates to migrate from the perineum and vagina to the peritoneal cavity is indisputable."

Do you agree with that?

A. No. This is an example of what I was saying earlier. Someone making a very, very strong statement. Indisputable, and yet there's no studies showing that perineal talc can make it to

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the ovaries. And yet Dr. Epstein is saying it's indisputable.
So that's not a judgment call. That's not reasonable doctors having different opinions. That's just wrong. It can't be indisputable without a single study showing its ability.
Q. You -- you disagree with FDA on the issue of migration being indisputable, correct?
A. No, I -- I disagree with Dr. Epstein.
Q. And this letter comes from FDA, right?
A. Written by Dr. Epstein, right?
Q. Right. And --
A. I'm sorry, no, it's written by -- it seems to be written by Steven Musser.
Q. Right. It's written to Dr. Epstein.
A. It's written to Dr. -- so I guess I'm disagreeing with Steven M.

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Musser, Ph.D., who I -- I don't even know what area of practice he's -- he's the director of operations for Center of Food Safety and Applied Nutrition.
I -- I don't know if he knows more about the female genital tract than I do, but my -- my guess is probably not. And if he's calling it indisputable in the absence of any study showing that it happens, that by definition is just wrong.
Q. Doctor, you would agree, would you not, that in the Health Canada, the study authors, as part of the Bradford Hill have concluded that there is a biologically plausible mechanism by which talcum powder products can migrate from the perineum to the ovaries?
MS. CURRY: Object to the form.
THE WITNESS: I'd have -- I'd have to read through it again. Can you point it to me?
BY MS. GARBER:

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Q. You don't recall that?
A. No. If you can just point it out to me again.
Q. Just so I'm clear, you disagree with the position of the FDA as indicated in the April 1st, 2014, paper on migration, right?
A. I'm -- I'm disagreeing again with a Dr. Steven Musser, Ph.D., who is the deputy director for Scientific Operation Center For Food Safety and Applied Nutrition. That's who I'm disagreeing with.
Q. So going back to the Health Canada which we've previously marked as Exhibit 11.
Do you see starting at Pages 19 through 21, the study authors of the Health Canada assessment are analyzing the scientific evidence in the context of the Bradford Hill criteria?
A. Is there a specific area you'd like me to read or?
Q. No.

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Do you -- do you see that that's what that portion of the document is doing? It's an analysis of the evidence in the context of the Bradford Hill criteria.
Is that true?
A. They are addressing translocation in this section. I -- I assume that's part of a larger...
Q. Doctor, is -- is strength of the association a criteria of Bradford Hill?
A. Yes.
Q. And consistency is a criteria of Bradford Hill?
A. Yes. Which makes me think I'm looking at a different page.
I'm sorry, which page are you on?
Q. 19 through 20.
A. 19.
Q. Specificity as an aspect of --
A. Oh, down at the bottom. I'm

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sorry. I was looking someplace else.
If you can just give me some idea when we turn the page, if you're talking top or bottom, I can probably get there faster.
Q. Doctor, Pages 19 through 21, the authors of Health Canada are analyzing the scientific evidence in the context of the Bradford Hill aspects or criteria, are they not?
A. Yes.
Q. Thank you. And if you turn to Page 20 -- sorry, Page 21, under the heading of "Biologic Plausibility." You agree that that's one of the aspects of Bradford Hill, right?
A. Yes. And the first line they have is, "Particles of talc are hypothesized to migrate into the pelvis." And that's very different from the statement of the other doctor who said it's indisputable.
MS. GARBER: Motion to strike as nonresponsive.

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BY MS. GARBER:
Q. Doctor, did I ask you a question?
A. No.
Q. Should I get my time back that you just wasted?
A. It's a small amount of time.
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. All day long it's not a small amount of time, is it, Doctor?
So let me ask you this, under the biologic plausibility section of the Bradford Hill analysis as conducted by Health Canada, the study authors indicate that, "Particles of talc are hypothesized to migrate into the pelvis and ovarian tissue, causing irritation and inflammation."
I read that correctly, right?
A. Yes.
Q. The authors go on to say,

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"The presence of talc in the ovaries has been documented," and they cite to the Heller 1996 paper, correct?
A. True.
Q. And they go on to say, "This evidence" -- "This evidence of retrograde transport supports the biologic plausibility of the association between perineal talc application and ovarian exposure; however, the specific mechanisms in the cascade of molecular events by which talc cause ovarian cancer have not been identified." And then they cite to Taher 2018.
Did I read that correctly?
A. You read it correctly, yes.
Q. And Doctor, the Saed 2019 paper does, in fact, provide the molecular events by which talc can cause ovarian cancer. Can we agree with that?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:

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Q. Okay. You have read the Saed 2019 paper now?
A. I have.
Q. Not at the time of your report, but you have?
MS. CURRY: Object to the form.
THE WITNESS: I have.
BY MS. GARBER:
Q. Did it provide a molecular basis by which talc can cause ovarian cancer?
A. It proposed a theory without proving it. So when you say provide, I'm assuming you mean that it proposed a theory and then showed that that -- that molecular change actually transformed cells and causes cancer.
Q. You used the word "prove." So the study provided statistically significant findings of an association in support of the experiment hypothesis, correct?
A. I disagree.

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MS. CURRY: Object to the form.
THE WITNESS: I disagree. If the hypothesis is to say that inflammation was the cause of ovarian cancer, and in your study you prove something like CA-125 goes up, and you consider that proof of your hypothesis, I'd have to say that's not the case.
BY MS. GARBER:
Q. Doctor, was that the only finding of the Saed 2019 paper?
A. I'd be happy to look at the rest of it.
Q. Well, you seem to remember the CA-125 that was a corollary finding, wasn't it?
MS. CURRY: Object to the form.
THE WITNESS: If you have the paper, again, I'd be happy to look at the others.
BY MS. GARBER:

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Q. Can you think of any other molecular findings that were reported?
A. I remember --
Q. For instance ROS or NOS increasing with talc application?
MS. CURRY: Object to the form.
THE WITNESS: I remember -- and again, if you have the paper I'd rather look at it again. But I remember him making a statement that reactive oxygen species actually went up in the presence of talc when in fact they were actually lower than the controls except for one concentration.
And then with the next concentration, it actually went back down. And yet, he concluded that reactive oxygen species was actually going up.
BY MS. GARBER:
Q. What was the conclusion of the study authors in that paper, by way

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of --
A. I'd have to look at it again.
Q. Okay. And we'll do that.
So you see at the end of the Bradford Hill analysis and the Health Canada assessment, the authors conclude that the data are indicative of a causal effect, right?
A. That's what they state, yes.
Q. And so the authors have found that there is a biologically plausible mechanism by which talc can migrate and talc can induce inflammation, correct?
MS. CURRY: Object to the form.
THE WITNESS: The authors believe that Heller's findings are evidence of retrograde translocation of talc.
And that is a big assumption. And so I can understand how they would put

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those things together. But there's no proof in Heller's study where the talc particles came from.
And so they're saying this evidence of retrograde transports supports biologic plausibility. They cite a study that doesn't prove retrograde transport and says that is what I'm using to support what I believe is biologically plausible.
So yes, these authors are making a statement and then citing to something that never examined retrograde transport.
BY MS. GARBER:
Q. Doctor, you have not reviewed the Zervomanolakis or the Kunz paper with regard to genital tract peristalsis, have you?
A. No.
Q. Are you aware that there is retrograde genital tract peristalsis

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during the woman's cycle?
MS. CURRY: Object to the form.
THE WITNESS: Yes. Of course I am. Does that mean that talc is able to retrograde translocate? I'm not sure. This is what often happens. People cite studies that don't prove what the -- the point that they're trying to make.
BY MS. GARBER:
Q. Okay. There's been data that have shown that particulate in a woman's genital tract can travel retrograde from the vagina to the fallopian tubes and the ovaries, correct? You are aware of this data?
A. If you put her -- if you put her in the lithotomy position and give her a little oxytocin and -- yes, under those very unnatural conditions, there's studies supporting that.
What I'm saying is I don't

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see a single study -- and maybe you can quote one for me -- where they dusted the perineum of women and shown that that talc gets to the ovaries.
Q. Based on what we know about talc and its carcinogenicity that would be an unethical study to conduct at this point, wouldn't it?
MS. CURRY: Object to the form.
MR. MIZGALA: Object to the form.
THE WITNESS: Not if -- I would say not for a woman who's currently using talc.
BY MS. GARBER:
Q. Doctor, you would agree with me, wouldn't you, that there are study authors, peer-reviewed study authors, and in addition Health Canada, who have concluded that there is a biologically plausible mechanism by which talc can migrate from the genitals to the ovaries, true?

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A. True. And I've explained exactly how they make that connection.
Q. Thank you.
Let's talk about inflammation. You are aware that there is study data and peer-reviewed studies that indicate a biologically plausible mechanism by which talc can induce inflammation, correct?
A. Is there a specific --
MS. CURRY: Object to the form.
THE WITNESS: -- study you'd like to review?
BY MS. GARBER:
Q. No, I'm just asking you, have you seen peer-reviewed studies that indicate talc can induce inflammation?
A. I have not seen studies that I've read that I've been convinced. If you have a specific study that you'd like to review, I'm happy to go over --
Q. Have you seen the Ness data? Either '99 or 2000?

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A. I did -- it's on my reliance list. If we can pull it out I'd be glad to go through it again with you.
Q. Did the Ness authors conclude that there was a biologically plausible mechanism by which talc can induce inflammation?
A. Again, I'd be happy to read the paper if you have it.
Q. You're not sure?
MS. CURRY: Object to the form.
THE WITNESS: Oh, I don't remember everything off my reliance list off the top of my head, no.
BY MS. GARBER:
Q. Doctor, is it your opinion that -- is it your opinion that there is not a biologically plausible mechanism to support talc can migrate from the genitals to the ovaries and tubes because of the tubal ligation data?
MS. CURRY: Object to the

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form.
THE WITNESS: Please repeat that again.
BY MS. GARBER:
Q. Sure.
Do you base your opinion that talcum powder products don't migrate to the ovaries based on tubal ligation and hysterectomy data?
MS. CURRY: Object to the form.
THE WITNESS: No. I base the fact that I don't have any proof of talc being able to migrate to the ovaries under normal situations. The tubal ligation data and the inconsistency of its protective impact makes me question even further.
BY MS. GARBER:
Q. Doctor, if you could pull out Taher 2018, Page 2. Do you see under the results there --

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A. I'm sorry -- Page 2.
Q. -- that the study authors indicate that the most recent meta-analysis found a negative association with tubal ligation. That's what the authors say, right?
A. This is an unpublished, un-peer-reviewed paper.
Q. That's what the authors say in this paper, true?
A. In this unpublished un-peer-reviewed paper, yes.
Q. That's what the authors say, right?
A. In this unpublished peer-reviewed paper, correct.
Q. Turn to Page 33 please, Doctor. That the first full -- second full paragraph. It indicates, "Women with prior ligation of the fallopian tubes showed a significant reduction in risk," and then they cite a statistically significant odds ratio, right, against ovarian cancer?

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A. I'm assuming this is the results of the meta-analysis that hasn't been published?
Q. Yes.
A. Yes, that's what they say.
Q. All right. And then a couple lines down it says, "This might be attributed to the fact that tubal ligation is usually performed at an earlier age, thus preventing entry of talc into the reproductive tract earlier and prolonged exposure to talc, compared to hysterectomy that is performed later in life where higher exposure has already taken place."
It goes on to say, "In a recent meta-analysis," and then it cites 70, "The authors reported a negative association with tubal ligation and hysterectomy with risk of ovarian cancer."
Did I read that correctly?
A. Yes, you've read everything very well so far.

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Q. All right.
A. It's that private schooling.
Q. And -- and the authors go on to say as to the study that the authors there stated a highly plausible mechanism for the association --
A. I'm sorry -- yes. As suggested by the author. Suggested.
Q. Right. "Involving the blocking of ascent of such agents such as talc to the ovaries."
Again, you disagree with these study -- with these two study authors that indicate that talc can ascend the female genital tract, right?
A. It is a suggestion by the authors. It's not a proven point. These are conjecture and theory by those authors. And, yes, I would say apparently my bar is a little bit higher. I would like to see a study where you actually put talc on the perineum the way people put talc on the perineum and show that it gets to the ovaries. So, yes.

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And -- and I find, outside of this unpublished meta-analysis, when you get to the individual studies it becomes much less consistent on this protective impact of tubal ligation with regard to talc.

MS. GARBER: Objection. Motion to strike as nonresponsive.

BY MS. GARBER:

Q. Doctor, if you could turn back to Health Canada and Page 18. And I'll just point to where I'm reading, Doctor. Right here.

Do you see where I am?

Doctor, it reads: "There is support for an association of inflammation and increased risk of ovarian cancer." And it cites to the National Academy of Sciences, Engineering and Medicine in 2016 in the Rasmussen paper.

Doctor, that's what these study authors who did an analysis --

A. Can -- can -- I'm sorry,

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I'll let you finish.

Q. -- concluded about the mode of action, correct?

MS. CURRY: Object to the form.

THE WITNESS: Yes, and interestingly, I -- I would be glad to look at the Rasmussen paper. I believe it was actually a paper that was negative, that there was a paper that didn't show a reduce in the risk of ovarian cancer with -- with antiinflammatories.

BY MS. GARBER:

Q. And, Doctor, I'm glad you mentioned antiinflammatories. Because is the other basis for your opinion that talc, while it increases inflammation, doesn't cause ovarian -- talcum powder -- strike that.

Another basis for your opinion that talcum powder products do not cause ovarian cancer based on the

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fact that the NSAID data do not support reduction of risk of ovarian cancer?

MS. CURRY: Object to the form.

THE WITNESS: The main reason why I hold that opinion is because I have seen no evidence of chronic inflammation in the genital tract from perineal use of talc.

In the Heller study, in the case that they looked for evidence of clinical information, and -- and we know what it looks like with talc, because there's years of using it in pleurodesis, it causes granulomas.

I -- we -- we present every STIC lesion, a serous tubular intraepithelial carcinoma at Cornell. We present it as part of our tumor board. And so I've seen a lot of STIC lesions. I've seen a lot of p53 signatures.

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I've not ever seen a case with a granuloma or any evidence of granulomatous inflammation or any other sort of inflammation, and so that's the real -- the -- the other thing that you're mentioning, the inconsistency of whether antiinflammatories reduce the risk of ovarian cancer just further confirms my -- my belief.

But it's really the fact that I've seen the precursor lesion for high grade serous carcinoma, and I've never seen it in conjunction with any evidence of granulomatous inflammation.

BY MS. GARBER:

Q. Okay. Let's take both of those, because I think you mentioned two different things there.

As to what you see when you look at the tissue pathology, -- that's what you're referencing, right, what you're seeing microscopically in the path

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slides?
A. Yes.
Q. And --
A. I would argue in -- in ovarian cancer cases as well, I don't see granulomas.
Q. You mean macroscopically when you're doing surgery?
A. No, I mean microscopically. I also scrub out and look at all my frozen sections. And we present every new patient in a multi-disciplinary tumor board where we look at the slides. So there's not an ovarian cancer patient that I take care of that I haven't seen her histologic slides.
Q. Have you seen testimony where there is -- strike that.
Have you seen data that would suggest that you're not seeing evidence of acute inflammation because the talc and its effects have been subsumed by tumor? In other words, that's a snapshot in time when there's

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carcinogenic transformation, and what you're seeing over here years later you're not going to see the evidence of the chronic inflammation, correct?
MS. CURRY: Object to the form.
THE WITNESS: Maybe you misunderstood my description of what we do. I said look at every invasive cancer and we present every STIC.
And so that's precancer. That is a precursor to high grade serous ovarian cancer. And now we believe there's a p53 signature that's even earlier. And I will tell you that I've never seen any evidence of inflammation in any of those lesions, nor have I read of anybody showing granulomatous inflammation in any of those lesions.
So you may believe it disappears later. I'm saying even

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at the time of precancer, I've not seen it. And if it's not there in the precancerous phase, when was it there?
BY MS. GARBER:
Q. Is it your opinion that all epithelial ovarian cancers begin in the fallopian tube?
A. No.
Q. Okay. Let's talk about the NSAIDs, the NSAID data.
You've looked at some studies about NSAIDs and their effect upon the risk of --
A. Yes.
Q. -- ovarian cancer right?
A. Yes, I have.
Q. Would you agree with me that the aspirin data seem to indicate a decreased risk in ovarian cancer?
MS. CURRY: Object to the form.
THE WITNESS: I'm not sure if that's consistent in every --

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in every study. I just want to get to my report in that area, if that's okay.
BY MS. GARBER:
Q. Okay. Doctor, shall we go off the record?
A. You can. It's not going to take me long.
THE VIDEOGRAPHER: The time is 5:49. Going off the record.
(Brief pause.)
THE VIDEOGRAPHER: The time is 5:49 p.m. Back on the record.
THE WITNESS: So Bonovas, et al., is a meta-analysis that showed antiinflammatory drug use did not reduce ovarian cancer.
Ni, et al., did a pooled analysis of 13 case-control studies, one clinical trial, three cohort studies. Also found no efforts of an association between aspirin use and ovarian cancer and did not find strong evidence of an

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association between non-aspirin NSAID use and ovarian cancer.
BY MS. GARBER:
Q. Doctor, did I have a question pending?
A. You had asked me -- yeah. You did. That's why we went off. Remember I was looking for the --
Q. Okay. Have you seen the -- I don't know how to pronounce it -- Q-I-A-O, 2018, study with regard to -- with regard to aspirin and its effects on ovarian cancer?
A. I have not.
Q. Have you seen Trabert 2013 study wherein the study authors found that use of antiinflammatory aspirin was associated with a reduction of risk of ovarian cancer?
A. I believe that --
MS. CURRY: Object to the form.
THE WITNESS: I believe that's in my -- my report that's

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saying -- to show the inconsistencies. I gave you two examples of studies, one including meta-analysis, and showing no reduced ovarian cancer, and the studies that you mentioned that show that there was a reduction.
BY MS. GARBER:
Q. Do you agree, Doctor, that there are data on both sides for both aspirin and nonsteroidal antiinflammatories that go both ways? In other words, there's some data that show a decreased risk of ovarian cancer and some data that do not for both aspirin and NSAIDs?
A. I do believe that if there was powerful enough data to support the use of antiinflammatories to prevent the deadliest GYN malignancy, this would be a common recommendation for patients to use. We don't tell BRCA mutation patients to take NSAIDs. We don't tell the women at the highest risk of ovarian

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cancer to take an NSAID, Tylenol -- well, Tylenol really hasn't shown much difference. But even aspirin.
That's different from a woman who has -- or a man who has familial adenomatous polyposis. There's certain situations where the data is so strong that you can prevent cancer, it's actually recommended to use aspirin to prevent it. And we don't do that in GYN oncology.
And so I'd have to ask you, not only do I not believe this, but why is the GYN oncology not recommending NSAID and aspirin use if it is so proven that it decreases ovarian cancer risk? It would be --
MS. GARBER: Objection. Objection. Motion to strike as nonresponsive.
BY MS. GARBER:
Q. Doctor, you're talking in paragraphs, and you're not answering my question. I'm going to just ask you to

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indulge me, please.
MS. CURRY: I disagree.
BY MS. GARBER:
Q. My question --
MS. CURRY: That was directly responsive to the question.
BY MS. GARBER:
Q. My question was, do you agree that there are data for aspirin and NSAIDs that go both ways, they decrease the risk, and other studies do not show that?
A. The reason why for speaking in paragraphs --
Q. I didn't ask you why.
A. -- is because it's still clearly stated in my report --
Q. Doctor, I didn't ask you why you're speaking in paragraphs.
A. But it says so in my report. And I gave you the examples. And we just went through them one by one. I gave you two examples where it did, and two

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examples it didn't. And then you follow up a question --
Q. If you're not -- if you're not going to answer my question --
A. Because --
Q. -- I think we're going to have to call the Court because we're nearly done, and you're talking in paragraphs and you're not responding to my question.
A. But you're asking --
MS. SHARKO: The order doesn't allow you to criticize his answer. So please stop.
THE WITNESS: You're asking questions that --
MS. O'DELL: That's not true, Susan. Completely not true.
THE WITNESS: -- have clear evidence. You're saying have I -- I cited in my report data that went both ways. And then you turn around and ask me, do you believe that data goes both ways? And I

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cited.
BY MS. GARBER:
Q. I never said in your report.
Do you agree that there are peer-reviewed published studies on the topic of anti-inflammatories, aspirin and NSAIDs -- NSAIDs, that go both ways, some data show a decreased risk and other data do not?
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. Do you agree?
A. I do agree. And that's the reason -- the fact that it's gone both ways is the reason why we do not recommend nonsteroidal use or aspirin use to prevent it.
Q. And Doctor, you don't know -- strike that.
You cited on your supplemental report some data that were cited in the Penninkilampi paper about the COX expression in epithelial ovarian

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cancer.
Do you recall that data?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. Why did you cite those data?
A. Couple reasons.
Penninkilampi, in trying to explain the way exactly what were you trying to explain, he's saying that I know it's inconsistent, the data on nonsteroidals. He's saying, I know it doesn't look in support of my argument for my biologic plausibility.
But maybe -- maybe NSAIDs don't work because they don't -- they only -- they prevent -- they work on COX. And COX expression is low in these cells anyway. And that's why you don't see a more impressive -- so he's explaining why this data that you're saying is -- is as unimpressive as it is.
And so I read in

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Dr. Saenz -- her deposition, she mentioned some basic science research by Dr. Dineo Khabele, who I happened to have been a resident with back at Cornell years ago.
And so that piqued my interest. And I was curious to see what is she doing in her lab, and so I actually went back and I looked at the studies that she was showing to see that Penninkilampi actually had misstated the fact that Type 2 tumors, high grade serous carcinomas, actually expressed COX-1. And Type 1 expressed COX-2.
So this idea that inhibitors of COX, that NSAIDs, that they don't work, or aspirin doesn't work because there's low expression of this thing in the first place, that doesn't make sense. If -- if -- you'd have to explain something else.
Maybe it doesn't make a difference because ovarian cancer is not caused by inflammation.

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Q. You didn't read the Wilson 2015 paper with regard to COX -- COX expression in epithelial ovarian tissue, did you?
MS. CURRY: Object to the form.
THE WITNESS: Whose -- whose paper? I'm sorry.
BY MS. GARBER:
Q. Wilson, et al.?
A. If you can show it to me I'd let you know. I don't think so.
MS. O'DELL: Counsel, please don't show something to the witness.
MS. CURRY: I'm just -- you're referring to -- you just said Wilson 2000 --
MS. O'DELL: Let me finish. That's the third time --
MS. CURRY: Hang on a minute and let me explain. It's not the third time.
MS. O'DELL: It's the third

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time I've seen you do it and I haven't said anything. But that's not appropriate --
MS. GARBER: I've seen you do it as well.
MS. CURRY: Excuse me. Excuse me. I've pointed out where you were trying to show something on the Elmo, and he's trying to find it, where it is on the document to help speed things along.
MS. O'DELL: Those --
MS. CURRY: What I just referred to him -- excuse me. Let me finish speaking, please.
What I just pointed out was, when you say Wilson 2015, it's -- you're not giving any further information about the article.
So I'm pointing out that it's the one on his supplemental list of items considered that we've produced to you today.

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That's the only thing I was doing. That is not inappropriate.
MS. O'DELL: It is inappropriate --
MS. CURRY: I disagree.
MS. O'DELL: -- and the three instances that I've referred to are not occasions when the Elmo was in use, so --
MS. CURRY: Well, I think you are mischaracterizing what has happened today.
MS. O'DELL: That is not true.
BY MS. GARBER:
Q. Doctor, is the basis for your opinion that talc does not induce inflammation which leads to ovarian cancer based on pleurodesis data?
MS. CURRY: Object to the form.
THE WITNESS: No.
BY MS. GARBER:
Q. Pleurodesis does -- talc

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pleurodesis has been shown to increase inflammation in pleural tissue, correct?
A. But not cancer. Yes, it increases --
Q. That wasn't my question.
A. It increases inflammation. Does not cause cancer.
So the reason why I don't think inflammation --
Q. Doctor, I didn't ask you the reason. Did I?
A. Oh, I'm sorry. I thought I was here to clarify my positions. I'll wait for the questions.
Q. Thank you. I really appreciate that. You've got to let me get there.
A. You don't get there.
Q. I will if you don't stop talking in paragraphs.
Doctor, did you read the Ghio 2007 study with regard to pleurodesis, talc pleurodesis?
A. Can you produce it for me so

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I can let you know?
Q. I will.
While she's pulling that, I'll ask you this. You indicate that talc pleurodesis does not induce cancer, is that fair, what you said?
A. Yes.
Q. And the number one indication for talc pleurodesis is malignant pleural effusions, right?
A. Yes.
Q. And so those patients already have cancer and are likely end stage, right?
A. It had been used for years on patients without malignancy. The reason why it's used on patients --
Q. Did you say yes?
A. Say this again?
Q. Did you say yes to my -- to my question?
MS. CURRY: Objection. Please don't interrupt him --
BY MS. GARBER:

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Q. Did you say yes to my question? I didn't ask you for the reason.
A. Your -- your question is?
Q. Did you say yes?
A. Can you ask the question again? I want to -- just repeat it.
Q. I said: "And those patients have cancer and are likely end stage, right?"
And you said: "It has been used for years on patients without malignancy. The reason --"
And then I said: "Did you say yes?"
You said?
A. Yes. In those patients that have malignancy, they are likely end stage. As opposed to the patients who don't have malignancy for years that has been used.
Q. Doctor, the title of this study is "Talc Should Not Be Used For Pleurodesis in Patients With Nonmalignant

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Pleural Effusions."
(Document marked for identification as Exhibit Holcomb-26.)
BY MS. GARBER:
Q. Nonmalignant pleural effusions are what for the lay listener?
MS. CURRY: Object to the form.
MS. SHARKO: What exhibit is this now?
MS. BROWN: 26.
MS. SHARKO: Pardon me?
MS. BROWN: 26.
BY MS. GARBER:
Q. What's a nonmalignant pleural effusion?
A. A nonmalignant pleural effusion is one where you have fluid surrounding the lung but it's not from a cancer.
Q. All right. And -- and this paper is authored by Andrew Ghio and Victor Roggli.

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Do you see that?
MS. CURRY: Object to the form.
THE WITNESS: Yes.
BY MS. GARBER:
Q. Okay. In the first paragraph, it begins, however, it says, "However, there should continue to be concern regarding use of talc for pleurodesis in individuals with nonmalignant pleural effusions and spontaneous pneumothorax. This dilemma results from a possible increased risk of malignant mesothelioma in those patients treated with talc. Consequently, an alternative agent should be employed in any individual without malignancy requiring pleurodesis."
Did I read that correctly?
A. You read that correctly again.
THE VIDEOGRAPHER: Can you -- your hair is on top of the mic.

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MS. GARBER: Sorry.
THE VIDEOGRAPHER: Thanks.
BY MS. GARBER:
Q. Doctor, do you think that -- that peer-reviewed published data indicate that there is a dose-response with regard to talc and risk of ovarian cancer?
A. I believe that that's one of the weaknesses is it's not consistently shown.
Q. But you do agree that there are peer-reviewed studies which show a dose-response, correct?
MS. CURRY: Object to the form.
THE WITNESS: I've seen studies that are peer reviewed and published that have only two levels of exposure, and one is higher than the other and they call that a dose-response.
So what I've seen in the literature, people define

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dose-response in a lot of different ways. So I'd have to agree with you, yes.
Penninkilampi does that. Two dose levels and says there's a dose-response.
(Document marked for identification as Exhibit Holcomb-27.)
BY MS. GARBER:
Q. I'm going to mark as Exhibit 27 the Berge paper that you've referenced many times today, Doctor.
And, Doctor, if you can turn to -- if you can turn to -- well, in this paper, unfortunately there isn't page numbers.
And so this table is Table 3, and it appears about five, six pages forward from the end of the document. Table 3.
A. Sure.
Q. If you want, we can look at it here. Do you see Table 3, Doctor?

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A. Yeah. I mean, I can't -- I'm going to have to watch up here because it's too small.
Q. Are you there --
A. Yeah, I'm going to have to sit it here because --
Q. -- in your version?
MS. CURRY: Can I show him my version which is --
THE WITNESS: I mean literally, it's this. That's Table 3. You want me to read that and give you an opinion?
MS. GARBER: Let me see yours, Ms. Curry, if you could.
Yes, please show that to him. Thank you.
BY MS. GARBER:
Q. Doctor, in the Berge study it indicates that with the duration of talc use greater than ten years, defined as ten years, there is a statistically significant relative risk, correct?
A. I'm just trying to make sure

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I understand what they're looking at here.
Q. That's what the table says, right?
A. Give me one second, ma'am. I'll be right with you.
MS. GARBER: Let's go off the record then.
THE VIDEOGRAPHER: All right. The time is 6:03 p.m. Off the record.
(Brief pause.)
MS. SHARKO: For the record, we object to this. I don't think it's appropriate. I don't think it's appropriate, but it's late in the day, and I assume that the plaintiffs are almost done in any event.
MS. GARBER: You're correct in that regard.
THE VIDEOGRAPHER: We are back on the record. The time is 6:04 p.m.

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BY MS. GARBER:
Q. Doctor, these data here that are presented in Table 3, they show duration and frequency of talc use, right?
A. Yes.
Q. In the meta-analysis?
A. Yes.
Q. Correct?
And for the duration defined as ten years, the relative risk is statistically significant at 1.16, right?
A. The only thing I'm not -- I have to say I'm not sure what's going on here, and I didn't want to hold up more time. Are they saying if you compare studies in this 12-risk estimate and look at someone who had less than ten years use and more than ten years use, and then say the relative risk between those two is 1.16, and a confidence interval that comes close but doesn't cross one, then you're -- if it's a -- if it's just splitting it in two, and say well ten is

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the split-off and I'm going to look at less than ten and more than ten, that's not a dose-response. You can't make a dose-response on just two observations.
And I think that may be what they're doing on the second one as well. But to be perfectly honest, I'm not sure. I'd have to look at the methods to figure out what they're doing here. But it seems like a -- like a -- basically just -- what's the term I'm looking for? Just two options, less than ten years, more than ten years.
Q. Doctor, let me ask you this. Does Table 3 --
A. I guess I don't understand exactly what they did here.
Q. Yeah. Okay. That's fair.
Does Table 3 present duration and frequency of talc use that present statistically significant results?
MS. CURRY: Object to the form.

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THE WITNESS: Yes. But not together. They're saying duration in one and frequency in the other. So they're saying that -- but I think they've just split this in two.
BY MS. GARBER:
Q. And, Doctor, if you go back to the abstract, first page of this study.
A. Right.
Q. Okay. Second-to-last sentence. It says, "This meta-analysis resulted in a weak but statistically significant association between genital use of talc and ovarian cancer, which appears to be limited to serous carcinoma with a suggestion of a dose-response."
Do you see that?
A. Yeah.
Q. Those were the authors' words, right, suggestion of a dose-response?
A. Suggestion, yes.

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Q. Okay. And then --
A. And I think they're using suggestion because they just did a dichotomous -- that's the word that I was looking for, dichotomous -- a dichotomous evaluation with just -- and you can't prove a dose-response. Because if they were doing a test for dose-response, they met statistical significance. And you know how much I like confidence intervals. They would say that they found a dose-response. But they're saying it's a suggestion of a dose-response because they didn't do that sort of analysis.
Q. Doctor, Health Canada concluded there was a dose-response in their Bradford Hill, right, under their biologic gradient assessment?
MS. CURRY: Object to the form.
THE WITNESS: I'd have to look -- have to look back at that.
BY MS. GARBER:

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Q. You don't remember?
A. No, I don't.
Q. All right.
A. Can you tell me which page you are talking about?
Q. Can I ask you a few more questions?
Were you provided by Johnson & Johnson counsel any testing of talcum powder products by Dr. Longo with regard to historical samples of talcum powder products?
A. No.
Q. Were you provided by Johnson & Johnson with any internal Johnson & Johnson company testing of their talcum powder products for asbestos or fibrous talc?
A. No.
Q. Were you provided with any company witness testimony with regard to testing of talcum powder products?
A. I hadn't requested any of these, and no, I wasn't provided.

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Q. So, Doctor, let me ask you this. I want you to assume that talcum powder products contain asbestos, and a patient of yours has asked you, is it safe to use talcum powder products on my genitals. What would be your response?
A. Well, my first step would be to disclose that I'm involved in this litigation.
And then I would tell her, pretty much what I would say without that assumption, that there are some, in my opinion, weaker designed studies showing a weak, as other people agree, increased risk of ovarian cancer. And other weaker -- other weakly designed studies that show no difference, and it seems to be about a 50/50 thing, and then cohort studies that show no increased risk.
And I would tell the patient overall there's not sufficient evidence to suggest that talcum powder causes ovarian cancer.
Q. And, Doctor, if after you

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said all that to her, she said, "I just need to know, Doctor, should I use it? Is it safe? Yes or no?" what would your response be?
MS. CURRY: Object to the form.
THE WITNESS: I'd want to ask her why she uses it. I'm going to make another assumption. The fact that she's asking me again after that explanation is that she's concerned. And I would say, if you're concerned maybe you should find an alternative product because you're concerned, not because I think it causes ovarian cancer. But I don't see why you would stress yourself out over this.
BY MS. GARBER:
Q. And, Doctor, if your patient said, "I just need to know, is using Johnson & Johnson talcum powder products that contain asbestos, is that safe for

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me to use? Yes or no?"
MS. CURRY: Object to the form.
THE WITNESS: And this is with my assumption that there's asbestos in the product?
BY MS. GARBER:
Q. Right.
A. And I'm going to make another assumption that there were asbestos in the products that was studied in this totality of the evidence that I reviewed. And I would -- I'm not going to repeat it for the sake of time, but I would have the same exact discussion with her.
Q. You would say that it's safe to use?
A. I would say that, given your assumption, there's asbestos in this talcum powder. The totality of the data using the same product that you say has asbestos in it, does not convince me that it causes ovarian cancer. So I would --

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that's what I would say to her.
Q. Would you say that it was then safe to use?
A. Again, I'm telling you that there is no convincing evidence that this powder causes ovarian cancer. And that's where I would leave it.
Q. Okay. Let me turn to another hypothetical.
I want you to assume that Johnson & Johnson's talcum powder products are found to contain fibrous talc and your patient asks you the same question, is it safe for me to use Johnson & Johnson's talcum powder products that contain fibrous talc on my genitals, what would your response be?
MS. CURRY: Object to the form.
THE WITNESS: In this hypothetical situation, can I assume that that same Johnson & Johnson that has fibrous talc was the same stuff used in all the

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body of literature that I've or -- is that what you'd like me to assume as well?
BY MS. GARBER:
Q. What I want you to assume is that one of your patients is asking you is it safe or not.
A. But this is your world. And this is your hypothetical situation, so I want to make sure I'm doing it right.
The patient is asking me, talcum powder products by Johnson & Johnson has fibrous talc as you said. And I'm just asking you, can I assume that the body of literature in its totality that I've reviewed is the same product that you're describing, there is no reason for me to have a different conversation?
Q. My hypothetical did not include the body of literature.
My hypothetical was that Johnson & Johnson's products contain fibrous talc and your patient is asking

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you, is it safe to apply this product to my genitals.
A. Okay. I'm going to assume then that the product that you're describing is the same product that was used in the totality of the data that I reviewed. And I would tell her the exact same story, that there's some weaker studies suggesting a modest or weak inconsistent positive association, and stronger studies showing no association. And in its totality, I would say there's no compelling evidence that that product that you're describing increases her risk for ovarian cancer.
Q. Do you go to those data because you assume there's asbestos in Johnson & Johnson's products always?
MS. CURRY: Object to the form.
THE WITNESS: Do I go to what data?
BY MS. GARBER:
Q. Do you go to the talc data

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because you make an assumption that Johnson & Johnson's products contain asbestos?
MS. CURRY: Object to the form.
THE WITNESS: I'm not sure what would make you say that.
How else can I advise a patient on the risk of a substance without going to the epidemiologic data on that substance? She's asking me about talc. What other data am I going to review to give her an answer?
BY MS. GARBER:
Q. Doctor, you didn't look at the NTP data, did you?
A. No.
MS. GARBER: Okay. Let's just take a break and let me look at my notes. But I think I'm finished.
MS. CURRY: Let's go off the record.

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THE VIDEOGRAPHER: Okay. The time is 6:13 p.m. Off the record.
(Short break.)
THE VIDEOGRAPHER: We are back on the record. The time is 6:36 p.m.
BY MS. GARBER:
Q. Doctor, I'm going to mark an additional paper that appears in the Lancet dated March 23, 2019.
(Document marked for identification as Exhibit Holcomb-28.)
BY MS. GARBER:
Q. And, Doctor, you have not seen this paper before, have you?
A. No.
Q. All right. If I could turn your attention to the left-hand column that appears at the bottom if you look up here?
A. Yes.
Q. Okay. And, Doctor, it

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reads -- the title is "Epithelial Ovarian Cancer" by Stephanie -- oh boy. Okay. I have to start with French.
A. Lheureux, I believe.
Q. Lheureux. All right.
And it indicates: "Risk factors for epithelial ovarian cancer include the number of lifetime ovulations (absence of pregnancy, early age of menarche, and late age of menarche) family history of EOC, smoking, benign gynecologic conditions (including endometriosis, polycystic ovarian system, and pelvic inflammatory disease) and potentially the use of talcum powder."
Did I read that correctly?
A. Yes, you did.
Q. So here the authors just days ago are indicating the potential of talc as a risk factor for epithelial ovarian cancer, true?
MS. CURRY: Object to the form.
THE WITNESS: Yes. They for

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some reason separated that one out with a potentially.
BY MS. GARBER:
Q. All right. And the footnote that the authors are citing to is the Penninkilampi data, correct?
A. Yes.
Q. And, Doctor, I'm going to mark another document as Exhibit 29.
(Document marked for identification as Exhibit Holcomb-29.)
BY MS. GARBER:
Q. And this is a study that appeared in ACOG Obstetrics and Gynecology, and it's titled "What's New in Ovarian Cancer."
Do you see that?
A. Yes, I do.
Q. And it says, "Best articles from the past year," correct?
A. Yes.
Q. It's written by Jason D. Wright, M.D., correct?

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A. Correct.
Q. You respect him?
A. Yes.
Q. And the Penninkilampi article is listed as four of the best articles from the past year, correct?
A. Yes.
Q. Doctor, we --
MS. CURRY: Object to the form of the last question.
THE WITNESS: I don't -- you know, I'm sorry.
BY MS. GARBER:
Q. Doctor, I didn't have a question.
A. No, no, I want to go back. Because I said yes. But you made a few misstatements there.
A, you said this was a study. It's not. It's another op Ed piece from Jason Wright saying what he felt was the best papers of the year.
Two, you said it was an ACOG. No, it's the journal of

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obstetrics -- Obstetrics and Gynecology is the name of the journal this is in.

And just to clarify, without speaking to Dr. Wright, I'm not sure why he's calling these specifically the best, whether he's speaking towards the quality of the studies or just what's the most popular or sensational.

Q. Doctor, what's the journal name?

A. Obstetrics and Gynecology.

Q. Does that -- do people refer to that as by a particular color?

A. Green.

Q. And that's a -- that's a journal that you regularly read?

A. Yes.

Q. And you do some review work for them, don't you?

A. Yes.

Q. That is a published document that appears within the Green Journal, right?

A. Yes. You're telling me this

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is from the Green Journal, so it's --

Q. Doctor, were you aware that IARC is currently evaluating talcum powder products for its carcinogenicity?

MS. CURRY: Object to the form.

THE WITNESS: No. I was not aware.

BY MS. GARBER:

Q. You are not aware of that?

Doctor, if -- I want you to assume that IARC reviews the data that exists to date and concludes that talcum powder products are a Group 1 carcinogen. Would your opinions in this case differ with regard to talcum powder products?

MS. CURRY: Object to the form.

THE WITNESS: I'd have to see what additional data happened between 2010 and 2019 that that bumped them from 2-B to 1. So I'm assuming that there would be some data that I've -- after my

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exhaustive review haven't seen before.

And so in that setting, if there was some convincing data that bumped them from 2-B to 1, yes, I would feel differently about it.

BY MS. GARBER:

Q. I will state in my hypothetical that the IARC authors or working group look at the data that exists today with regard to the epidemiological data, the meta-analyses that exist, the nine meta-analyses, including Taher, and the other epidemiological data, the Saed data and the other biologically plausible data, and the mechanistic data that was previously contained in IARC 2010, and they concluded that it -- that talcum powder products were a Group 1 carcinogen, would your opinions in this matter change?

MS. CURRY: Object to the

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form.

THE WITNESS: I have to be honest. It's hard for me to imagine that Dr. Saed's paper being quoted in IARC. So this is a tough one for me to get into your hypothetical situation here.

But no, I'm not so sure, because I'm thinking from the last time they published a classification to now, there's going to be three prospective studies, all coming to the conclusion that there is no increased risk.

And then there's going to be a number of meta-analysis, as you're saying, which a lot of the data is rechurning what they've already looked at. So it would be what incremental data have they added to it.

So I guess I'm having a hard time in your -- in your scenario,

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how IARC is going to get from a 2-B to a 1, based on what's been published from the last time that they issued an opinion on this.
BY MS. GARBER:
Q. I want you to assume that they get to a 1. Is your opinion going to change out of your respect for the institution of IARC, a branch of the World Health Organization?
MS. CURRY: Object to the form.
THE WITNESS: If IARC used Penninkilampi, for example -- let's say that I was -- I'm going to give you a hypothetical.
BY MS. GARBER:
Q. Doctor, you don't give me a hypothetical.
A. If --
Q. I give you one. You understand that, right?
A. I'm giving you the hypothetical of how I'm considering your

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situation.
Q. I want you to answer my hypothetical.
A. It depends on what brought them from 2-B to 1. I have respect for IARC because I looked at their methodology. We've gone through the things that I didn't agree with IARC methodology. But if you told me IARC's quality dropped to such a standard that they had Dr. Saed's paper as highly credible, and this is moving us from here to here, I'm no longer so impressed with IARC.
So, no, my respect level for IARC would drop considerably, and I probably wouldn't follow the recommendations.
Q. Doctor, you're aware, aren't you, of FDA's recent statements with regard to the businesses Justice and Claire and their cosmetic products?
A. That's -- I'm not -- can you repeat that once again.

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Q. Sure. Are you aware that the FDA -- are you aware of FDA's statements with regard to certain cosmetic makeup products that are sold at Justice and Claire's with regard to talc and asbestos?
MS. CURRY: Object to the form.
THE WITNESS: No, I'm not aware.
BY MS. GARBER:
Q. Did you, before you came here today and in preparation for your deposition, endeavor to look at what FDA is saying about talcum powder products?
MS. CURRY: Object to the form.
THE WITNESS: No.
(Document marked for identification as Exhibit Holcomb-30.)
BY MS. GARBER:
Q. Let's mark this as Exhibit 30.

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Doctor, this is -- at the bottom, you see this is the FDA's website, right, FDA.gov/cosmetics?
A. Yes.
Q. Do you see that?
A. Yes.
Q. And do you see at the top it indicates recalls and alerts? "FDA advises consumers to stop using certain Claire's cosmetic products."
Do you see that?
A. Yes.
Q. And do you see there in the middle of the document, it indicates, "Product samples test positive for asbestos," and then it lists a number of Claire's products?
A. Yes.
Q. Doctor, if there was such a finding by FDA with regard to J&J's talcum powder products, would your opinions change in this case?
MS. CURRY: Object to the form.

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THE WITNESS: I'd have to say the testing of the products that went into this body of knowledge that I have, I'm not sure. I would have to think about it. The reason why I'm hesitating is because I don't know, is that a new problem? Like, for example, this one store, Claire's stores, I think it's easier to call these folks out because you don't know if this is a new contamination.

The question would be if all this data is with the same contaminated product, I'd have to assume that a woman is at no more increased risk than -- than -- than the stuff in this paper -- in these papers.

But I can't see myself going against FDA regulations. I mean, if FDA says stop using something, I'm not going to tell people to use something against FDA's

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regulations.

BY MS. GARBER:

Q. And if FDA indicates that the testing that they conducted of Johnson & Johnson's talcum powder products test positive for asbestos, would your causation opinions change?

MS. CURRY: Object to the form.

THE WITNESS: No. No.

BY MS. GARBER:

Q. Would your advice to patients change?

A. Apparently the FDA would likely put out a warning to say stop using it, and, yeah, I would stop using it. I've done that in the past where there's things that -- if the FDA sends out a warning about, and I stop doing it, even though I may think in my hands it's safe.

It has a lot to do with medical/legal issues and things like that. But --

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Q. You would heed the warning?

MS. CURRY: Object to the form.

THE WITNESS: I would think anyone with common sense would. It doesn't make sense to not to.

BY MS. GARBER:

Q. Similarly, if FDA compelled a warning to be placed on Johnson & Johnson's products, would you heed that warning if your patients were asking you if it was safe to use?

MS. CURRY: Object to the form.

THE WITNESS: Putting a warning on it or pulling it off the market?

BY MS. GARBER:

Q. Putting a warning on the bottle.

MS. CURRY: Object to the form.

THE WITNESS: Would I tell patients to heed the warning.

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BY MS. GARBER:

Q. Sure. If the patient -- if there was a warning about ovarian cancer on the bottle, compelled by -- by FDA and your patient came and said I've been putting this on my genitals, should I stop, what would your answer be?

MS. CURRY: Object to the form.

THE WITNESS: I have to believe that if the -- if the FDA thought that that product was such a carcinogen and so dangerous there wouldn't be just a warning label, they would pull it off the market. If the FDA is just putting a warning so that patients are aware of it, I think my conversation with her is going to be very similar to the conversation I just told you I would have now.

BY MS. GARBER:

Q. But you wouldn't tell her

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to -- to stop using it?
A. My guess is the warning would be very similar to the conversations I'm having, there are some weaker data suggesting -- so in your -- you know, your hypothetical situation, it's -- I would think that they would possibly recall it or -- not recall it. They would -- they would put an advice to stop using a certain product, like they are doing in this situation. And a patient came to me and says the FDA has this warning to stop using this product, I would support the FDA.
Q. And, Doctor, I know you are not a regulatory expert, but you do know that at times FDA does not have the power to compel a warning, you understand that, right?
A. I -- I, really -- as you started with your statement, I am not a regulatory expert. I know very little about regulations and how the FDA works in that regard.

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(Document marked for identification as Exhibit Holcomb-31.)
BY MS. GARBER:
Q. I want to mark another document. And this is Exhibit 31, which is from the FDA website. And it's titled "Talc."
Doctor, do you see -- do you see that the date of the download of this document is March 19, 2019?
A. Yes.
Q. And, Doctor, did you ever endeavor to go to the FDA website and put in "talc" to see what the FDA was saying about talcum powder products?
A. No.
Q. Okay. I will represent to you what appears new on this website is what's under the heading of "Talc."
It says, "Here is a recent FDA action related to talc. Learn more below."
It reads, "The FDA continues

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to investigate and monitor reports of asbestos contamination in certain cosmetic products and will provide additional information as it becomes available. The agency is and will continue to work with other" -- "other federal partners to share our collective expertise to advance scientific test methods for the assessment of asbestos."
Did I read that correctly?
A. So far you've been perfect.
Q. Does it cause you concern that the FDA is interested in looking further into whether talcum powder products contain asbestos?
MS. CURRY: Object to the form.
THE WITNESS: No. It actually gives me reassurance that the federal agencies that are supposed to be protecting public safety are at work and doing what they are supposed to be doing.
BY MS. GARBER:

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Q. But you are here in this litigation saying talc is safe, even though FDA is looking into whether or not talcum powder products contain asbestos.
A. Right. So if --
MS. CURRY: Object to the form.
BY MS. GARBER:
Q. It doesn't concern you?
A. It would concern me if they told me that they found levels of talc and -- and -- you know, the -- the reason why it would concern me is because I don't know if that's a new contamination or that product is the same as it's always been.
If it's the same as it's always been, then you are talking about a level of contamination that doesn't have compelling evidence that it causes cancer.
But I don't know how I would know the difference. I think I would have to assume that it's -- that it's

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different than this. I think you'd have to either assume it's the same or it's different. And I think the safer thing to do would be to assume that it's different.

If I knew for sure that this level of contamination they find has been in this stuff all this time and all these thousands of patients that we've followed, you know, the large case-control studies, the 70,000, 60,000, 40,000 patients on cohort studies, if that's the product that they've been using and it's contaminated all this time, I would have to say no, that wouldn't worry me. But there's no way that I would be able to tell the difference.

Q. Shouldn't you, as a patient advocate, err on the side of safety?

MS. CURRY: Object to the form.

THE WITNESS: That's what I just said, I would.

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BY MS. GARBER:

Q. You know, Doctor, if -- you are a member of the SGO, right?

A. Yes.

Q. And that stands for Society of Gynecologic Oncology, right?

A. Yes.

Q. That's a professional organization?

A. Yes.

Q. And do you know what -- whether they list talc as a risk factor at present?

A. On which site, on the SGO website?

Q. Yeah.

A. No, I'm not -- I'm not sure.

Q. I want you to assume that -- that the SGO issues an advisory that talc can cause cancer. Would you continue to recommend to patients that they use talcum powder products on their genitals?

MS. CURRY: Object to the form.

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THE WITNESS: You're saying the advisory would just say that there's some evidence suggesting that talc -- what is the -- can you word the -- can you give me the hypothetical wording of what is SGO is saying?

BY MS. GARBER:

Q. Sure. SGO has issued an advisory that says there is evidence that talc can cause cancer, ovarian cancer.

A. Right. And then --

Q. Would you -- would you continue to advise patients that talcum powder products are safe?

MS. CURRY: Object to the form.

THE WITNESS: Before I made a decision on that I'd have to go and see what is the data that they are basing that on.

If they are basing it on the data that I've just reviewed, I would have the same discussion

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with my patients, because I -- I would say them saying that there's evidence to this effect is just telling the truth.

If I then have to go and read the body of literature that they're using to make that warning, to decide, well, yes, the -- the studies that they are referring to are the same ones I know, and the ones that don't is the same amount going both ways, my feeling would be the same.

So is their advisory based on new data or an assessment of what I've assessed?

BY MS. GARBER:

Q. You wouldn't heed the advisory of the SGO, your professional organization, is that your testimony?

A. And stop using talc myself? What -- what would --

MS. CURRY: Object to the form.

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BY MS. GARBER:
Q. And advise patients that it's safe to use?
A. You didn't say that SGO is advising to stop using talc. You said what would I do if the SGO had an advisory just saying that patients should be aware that there's information out there to this effect.
Q. That wasn't my hypothetical, was it, Doctor?
A. Yeah. Can you go back and read it?
Q. The SGO issues an advisory that talc can cause cancer. Would that change what you told patients about the safety of talcum powder products?
MS. CURRY: Object to the form.
THE WITNESS: If the SGO jumped up to the same classification as IARC that says there's insufficient evidence but this is potentially a carcinogen,

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I don't see how SGO would be saying anything different than IARC.
So that -- that statement that says it can, you'd have to go in and see, well, what's the evidence that you're basing it on.
And I'm saying that -- why would I change my feeling about this if somebody else looks at this data, and it's the same data that I've just reviewed, and says we're going to make this statement.
And the patient comes to me and asks me, well, how do you feel about that statement? And if it's based on this same data, I'm not sure how it changes the fact that it's from SGO. I'm still going to then explain, this is the truth as I see it and the totality of the evidence.
BY MS. GARBER:

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Q. You're not going to heed the advisory of the SGO?
MS. CURRY: Object to the form.
THE WITNESS: You -- the advice --
BY MS. GARBER:
Q. Because you know the data better?
A. The advice -- there is no advisory here. You keep on saying that the SGO is saying that there's evidence that talc can cause cancer. An advisory is telling you to do something. In this case, are they saying stop using talc or that patients should just be aware?
Q. Let me give you another hypothetical. SGO issues an advisory to stop using talcum powder products on your genitals because it contains asbestos. Would you heed that advisory?
MS. CURRY: Object to the form.
THE WITNESS: If the SGO is

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telling patients to stop using talc because of asbestos that's been proven to be there, yes, to be honest, I would probably drop in line, just not to be out of -- I'd be fearing medical/legal exposure by not doing it, no matter how I felt about the data.
BY MS. GARBER:
Q. More concerned about your neck rather than the patients, Doctor?
MS. CURRY: Object to the form.
THE WITNESS: I have my opinion of this data. The data -- if you're saying my hypothetical that I just gave you is that the data didn't change and SGO makes a statement. I'm worried about the patients the same amount, because the data is the data.
You're saying, well, what if SGO gets behind it and says based on what you read, we want to give

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an advisory?
The risk level hasn't changed. It's not based on any new data. So I don't care about my patients any less. The risk to them hasn't increased.
BY MS. GARBER:
Q. Doctor, is cornstarch a safe alternative to talcum powder products?
MS. CURRY: Object to the form.
THE WITNESS: It's an alternative, yes.
BY MS. GARBER:
Q. Is it a safe alternative?
MS. CURRY: Object to the form.
THE WITNESS: I have no reason to think that cornstarch is not safe.
BY MS. GARBER:
Q. You haven't done a comprehensive literature review of the cornstarch data, have you?

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A. No.
Q. Let me ask you about some of the expert work that you've done, just so that I'm clear on your prior testimony.
Since the Ingham case, and that verdict, and before you were hired in the MDL, did you continue to do any expert work with regard to talcum powder products and ovarian cancer?
A. No. You actually asked me that earlier. Same answer. No.
Q. Okay. And are you currently serving as an expert on the talcum powder products in any other litigation aside from the MDL?
A. No.
MS. GARBER: Okay. Just give me one moment.
Okay. All right. I have nothing further at this point. Thank you, Doctor.
THE WITNESS: Sure.
MS. CURRY: No questions.
MS. GARBER: Okay. We're

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finished.
THE VIDEOGRAPHER: Okay. Stand by, please. This marks the end of today's deposition. The time is 6:59 p.m.
(Excused.)
(Deposition concluded at approximately 6:59 p.m.)

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CERTIFICATE

I HEREBY CERTIFY that the witness was duly sworn by me and that the deposition is a true record of the testimony given by the witness.

It was requested before completion of the deposition that the witness, KEVIN HOLCOMB, M.D. have the opportunity to read and sign the deposition transcript.

MICHELLE L. GRAY,
A Registered Professional Reporter, Certified Shorthand Reporter, Certified Realtime Reporter and Notary Public
Dated: March 28, 2019

(The foregoing certification of this transcript does not apply to any reproduction of the same by any means, unless under the direct control and/or supervision of the certifying reporter.)

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After doing so, please sign the errata sheet and date it.

You are signing same subject to the changes you have noted on the errata sheet, which will be attached to your deposition.

It is imperative that you return the original errata sheet to the deposing attorney within thirty (30) days of receipt of the deposition transcript by you. If you fail to do so, the deposition transcript may be deemed to be accurate and may be used in court.

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ACKNOWLEDGMENT OF DEPONENT

I,_____, do hereby certify that I have read the foregoing pages, 1 - 521, and that the same is a correct transcription of the answers given by me to the questions therein propounded, except for the corrections or changes in form or substance, if any, noted in the attached Errata Sheet.

_____

KEVIN HOLCOMB, M.D. DATE

Subscribed and sworn to before me this _____ day of _____, 20____.

My commission expires:_____

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Notary Public

LAWYER'S NOTES

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